VOL. 177 No. 3 AMERICAN SEPTEMBER, 1952

Gas Journal

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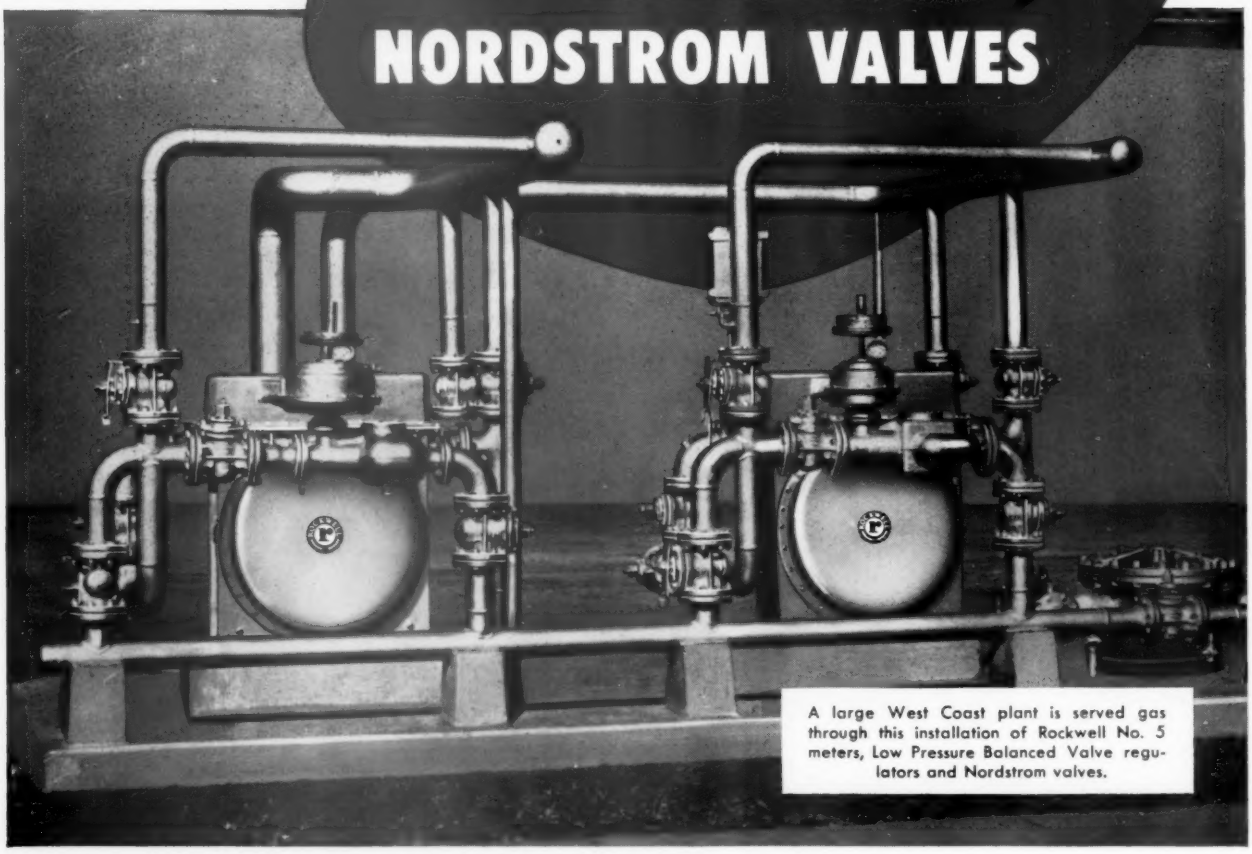

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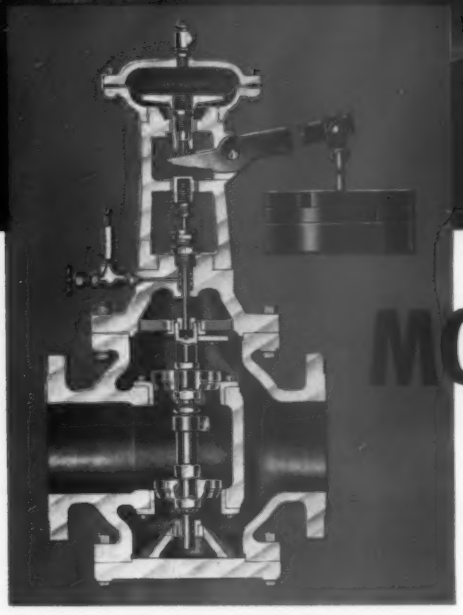

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AMERICAN Gas Journal
ESTABLISHED 1859

VOLUME 177 SEPTEMBER 1952 NUMBER 3

This month...

We observe that our esteemed contemporary, *The Gas World* of London, devotes its editorial for August 9 to a discussion of the low estate to which public relations, merchandising consciousness and promotional activities have fallen in the British gas industry. The editor seems inclined to lay most of the blame at the door of nationalization. For whatever meagre comfort it may afford him, however, let him accept our assurances that without any Ministry of Fuel and Power to inhibit its activities, the American gas industry is in about the same state as is that of Britain. When we read that "far too many in the gas industry feel that the time for action and adventure is past" and "the present passive attitude toward gas sales and the failure to prepare for full scale competition with the electricity industry, are going to make things grave indeed . . . ," we feel disposed to lift our Cousin's words and set them down as our own.

• • •

This month the Pacific Gas and Electric Company celebrates the 100th aniversary of the founding of the San Francisco Gas Works, forerunner and first of the 520 companies that over the century have been merged together into the great PG&E system. Marking the major milestone, the company has had prepared a complete history, "P.G. & E. of California," by Charles M. Coleman (McGraw-Hill Book Company, Inc., New York. $4.50). Mr. Coleman's carefully documented book not only traces the origin and development of antecedent companies to PG&E, but it also weaves into the story much of the rich historical color of old California. Over San Francisco expatriates, in particular, it waves the gentle wand of pensive nostalgia.

Of course PG&E has long since outgrown the San Francisco confines of old Peter Donahue's first gas works. But it never can, and we are sure it never would aspire to, outgrow the spirit of the city that gave it birth. That spirit, it seems to us, is about the only thing in California that is bigger than PG&E.

Contents

Editorial: An Industrial Advisory Council 13
Public Service of New Jersey Tries New Shallow Regulator Pits 14
The Employee Education Program of Public Service Company of Colorado—H. A. Tiemann 15
Safe Practices in Distribution of Natural Gas—L. G. Hanna 17
Insurance Policies Must Specify Coverage to Assure Protection—Leo T. Parker 18
Borrowed Funds Expected to Cost More With Arrangements Somewhat Difficult—John F. Falvey 20
Specialized Engineers for the Natural Gas Industry—Frank H. Dotterweich 21
American Gas Fundamentals: Public Utility Regulation—Nelson Lee Smith 23
Thirty Years of Industrial Gas in New England—H. J. Huston 27
News of the Gas Industry 28
New Bulletins 32
New Books 33
Men at Work 34
New Equipment 35
AMERICAN GAS MERCHANDISING..... 37
Cooperative Promotion Program Swings Customers to Gas 39
College Course in Gas Appliance Selling Expands as Results Become Evident 41
PGW and Six Range Manufacturers Push into Fall Matchless Campaign with 300 Cooperating Dealers 43
New Gas Appliances 44
Gas Appliance Industry News 46
Gas Industry Calendar 47
Index to Advertisers 48

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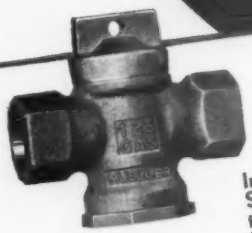

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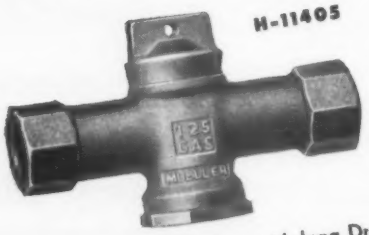

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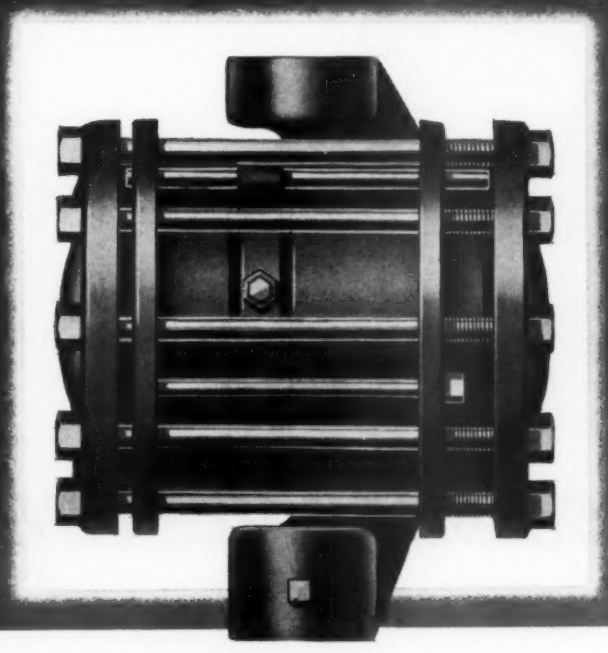

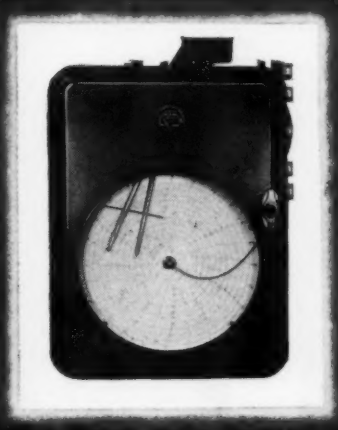

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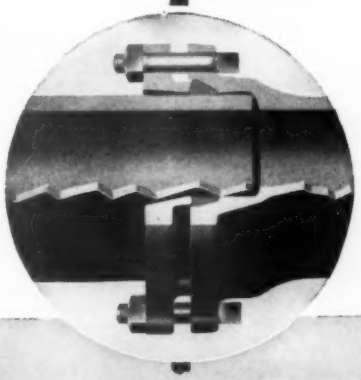

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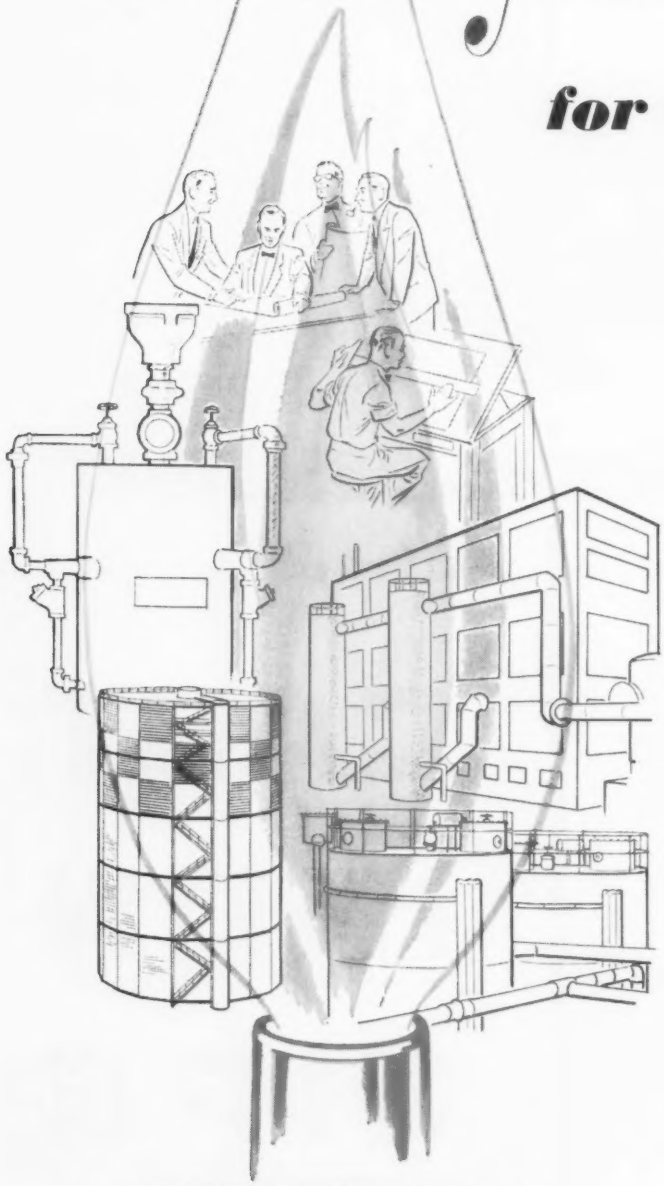

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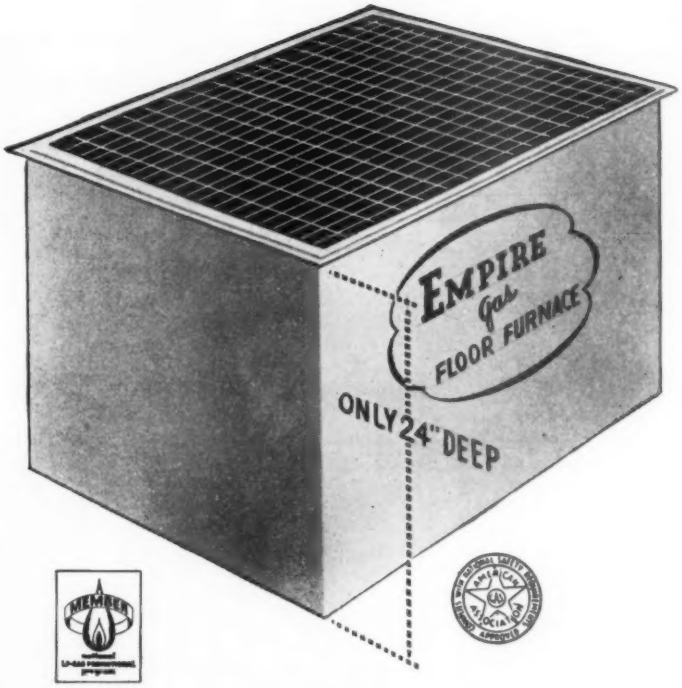

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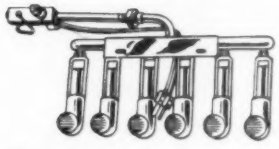

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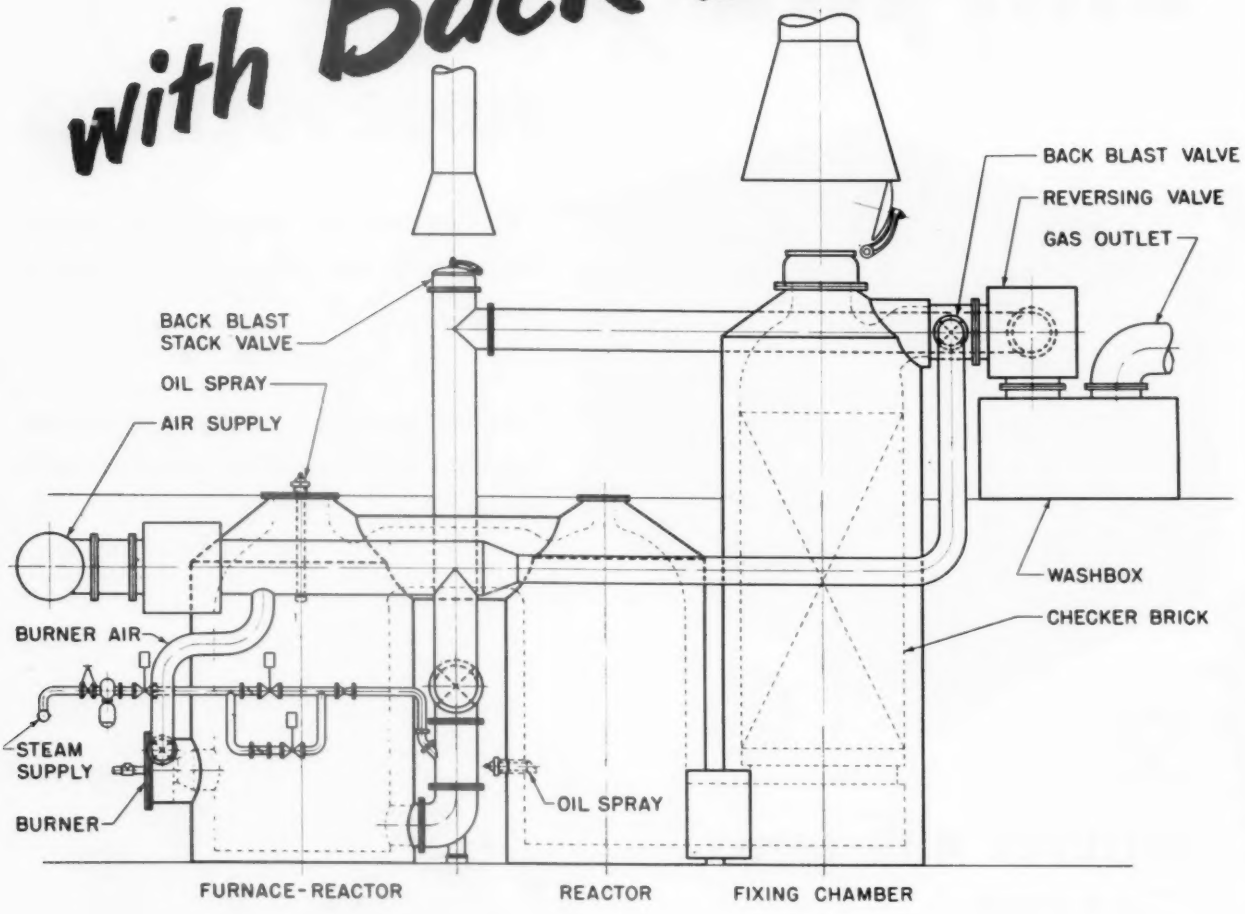

With the back blast feature added—as shown in the accompanying diagram—this conversion job will handle heavier grades of oil for gas making purposes.

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Editorial:

An Industry Advisory Council

WE CAN conceive of no pronouncement that at first glance would be more likely to cause consternation in association ranks than the recommendation that a new all-gas-industry organization, independent of both AGA and GAMA may soon be needed. Such an organization would devote itself exclusively to public relations, and to promulgating practices and policies within the industry that would make good public relations possible.

Unquestionably, both the gas utility and the appliance and equipment industries are becoming increasingly public relations conscious. Committees now at work within AGA and GAMA are attempting to set up workable programs, and still another committee composed of members of the two organizations is struggling with the problem of devising some sort of a joint effort that both might endorse.

Whether or not their labors will turn up an adequate and amply financed program that will rally a united industry to its support remains to be seen. In our opinion, the outlook at present is far from promising. In the first place, we detect on both sides a tendency to shop around for something cheap and what is still worse, each group appears to want the other to bear the major share of the expense.

In May of 1951, GAMA launched a public relations program, that by any standards, outside the gas industry, would have been considered modest in the extreme. Pitifully underfinanced, in relation to the dollar-volume of the industry and the magnitude of the job to be done, it purported to be nothing more than a sort of pilot run to demonstrate what could be accomplished on a national scale if adequate support were forthcoming.

Proponents of the plan felt that over the short period of one year the results amply justified a continuation and expansion of the effort. But the simple truth is that the majority of GAMA members were not satisfied, and it is highly probable that after the first of the year the activity will be abandoned, at least in its present form, unless the gas utilities through AGA elect to subscribe substantially to its support.

If they are sincere, who talk the necessity of a public relations program for all the gas industry, compatible with the size of that industry, and adequate to reverse the trend away from gas that is making itself manifest in so many fields of usage, they must be prepared to recognize the limitations of their own trade associations, to do the job.

To begin with, a public relations program for gas must be as tough, competitively, on the electrical industry as ingenuity, energy and adroitness can make it. Is it likely that AGA, heavily supported as it is by combination gas and electric utilities would be able to participate whole heartedly in such a program without alienating its combination company members? It strains credulity to expect it.

In its PAR plan activities, AGA is rendering an outstanding service to the gas industry. Its public information department is growing in stature and value every day. These activities warrant continuation and expansion, but they should not be erroneously classified as public relations, no matter how much the current appropriations may be increased. They are, at best, only some of the raw materials out of which a complete industry presentation should be built.

Members of GAMA, on the other hand, have already indicated that as an association they can only unite on some glorified form of product publicity. Their collective reaction to their own present program is proof enough of that. The vision of extolling and glorifying gas service on a broad objective basis is lost in small preoccupation with such questions as the amount of free newspaper lineage one division gets as compared to another.

Yet there are leaders, in both gas utility and gas appliance and equipment manufacturing ranks, who recognize that something on a scale far superior to anything heretofore proposed or attempted is immediately necessary if the gas industry is to recover its stature in the eyes of the public, and develop within its own ranks the vision and the will to forge ahead.

Under these circumstances we submit, for the consideration of those who already have that vision, the suggestion that a new and all-embracing organization —a Gas Industry Advisory Council—dedicated solely to public relations be brought into being. Among its sponsors and supporters should be only those who are completely dedicated to the development and expansion of gas service, who realize that public relations is much more than a series of spasmodic lunges toward paltry objectives, and above all who are able and ready to commit their organizations for the substantial funds that such a monumental undertaking would require.

There *are* such men in the gas industry. We have talked with them—Men who are weary of the interminable round of executive conferences, committee deliberations and other well-meaning but futile forms of organized shadow boxing. Their collective faith, determination and courage are needed by the gas industry today, as it has never needed anything else in its long and honorable history.

Elliott Taylor

Public Service of New Jersey Tries New Shallow Regulator Pits

THE requirement for a practical and economical way to install low pressure balanced valve regulators underground and out of the way has been met by Public Service Electric and Gas Company, New Jersey, together with Rockwell Manufacturing Company. The housing for this regulator installation is a shallow pit construction of cinder block set in the ground, with an open bottom of sand or porous earth for drainage.

The pit is arranged in such a way that the regulator is fully accessible for weight changing or servicing. There is, however, sufficient space for a man to enter the pit and gain access to the hand hole plate that covers the valve chamber on the side of the regulator body.

This view shows the steel grating over the completed pit with the covers laid on the sidewalk. The proximity of the vent post, which houses the recording pressure gauge, is indicated by the base in the upper right hand corner.

Regulator is waterproof

The regulator used in the Public Service Electric and Gas Company installation shown on this page is the Rockwell 014 which is of the inside-weight type, 3″ by 4″ and entirely waterproofed. This type of smaller regulator permits greater diversification of supply to a residential district, minimizing the number of customers who might be affected by service interruptions.

A breather pipe installed in the diaphragm housing is carried through the cinder block wall of the pit to a nearby vent post. Thereby, positive protection is provided for the regulator in case it becomes entirely submerged in water due to slow drainage.

The vent post, in the Public Service installation, is located at a convenient nearby spot. The housing on the vent post includes a recording pressure gauge. The gauge box is positioned approximately five feet above the ground level to consider convenience in testing the operation of the regulator by applying mouth air pressure, through a hose. This height is above the normally-deepest snow levels.

Accessible from ground level

Weights in the regulator can be added or removed from the ground level of the pit. The removal of the cover plate from the diaphragm housing does not involve entering the pit.

Ventilation is provided at all times in this regulator pit through the grate-covered opening which is sufficiently far below the sidewalk grade level to permit covering the grating itself with a pair of solid, but not air-tight iron covers. These covers are loose; not hinged.

This pit installation of low pressure regulators is complete with valve boxes and gauge box.

Economical construction

The convenience of the installation, with its full accessibility, is combined with the economy of construction which utilizes as its only materials the cinder blocks, gratings and cover plates.

The safe underwater operation of the regulator eliminates any necessity for waterproof masonry construction of the pit.

A progress photo of the construction of a shallow regulator pit showing the regulator and the breather pipe passing from it, through the cinder block, to the vent post.

The pit is large enough to accommodate a man and this photo shows the ease of access to diaphragm weights and side hand hole plate.

Photos Public Service Electric and Gas Co.
Rockwell Manufacturing Co.

The Employee Education Program of Public Service Company of Colorado

by H. A. Tiemann
Director, Education Department
Public Service Company of Colorado

THE company's education department, as a staff function, gives general direction to the education activities. The conference leaders and instructors are trained by the education director but the line officers are responsible for the execution of most programs. Instruction materials are drawn from the line departments and courses are jointly planned by technical personnel and the education department.

H. A. Tiemann

The company junior engineering program, on-the-job training, foremanship conferences, fundamentals of selling, appliance selling, customer relations, job methods, and all improvement in service training activities offered on company time are operated—in that manner.

Some classes that are interdepartmental in character and those offered in the evening on the leisure time of the employees are planned in cooperation with the line departments, but are sponsored directly by the education department. Public speaking, fundamentals of selling, electronics, load center distribution and control, industrial electricity, adequate wiring, gas appliance installation, and a few other courses fall in this category.

Cooperative relations are maintained with the extension division of the University of Colorado, the University of Denver, and other local colleges, and with the Emily Griffith Opportunity School and the several vocational schools of the districts served by the company.

Some classes operate under the jurisdiction of the public vocational schools with such organizations as the Rocky Mountain Electric League, the Rocky Mountain Gas Association, the electrical dealers, the electric contractors and the local unions acting in an advisory capacity in planning the courses and in promoting attendance.

The company library and the company suggestion system are also administered by the education department.

The educational activities of the company are classified under four major divisions: (1) employee information, (2) formal classes in technical and related instruction, (3) employment training on the job, and (4) extension and correspondence instruction.

The employee information program

The information program is carried on through group meetings on company time, through publications both company and industry wide, and by means of a company library, supervision bulletins, supervision magazines, and by the liberal use of bulletin boards. This activity is directed toward keeping supervisors and employees informed on matters pertaining to the company's welfare, company progress and practices, and good business practices in general.

Enrollment in Training Program of Public Service Company of Colorado

INFORMATION—	
Printed matter distributed to	3,200
Group meetings attended by	2,240
EMPLOYMENT TRAINING—	
On-the-job	300
TECHNICAL INSTRUCTION—	
Company time	250
EXTENSION AND CORRESPONDENCE	75
FOREMANSHIP	50
ENGINEERING	7
TECHNICAL INSTRUCTION*	150

* Employees of dealers and contractors enrolled in the same courses offered to employees of Public Service Company of Colorado.

Publications

Examples of publications include the safety manual, meter readers' handbook, question and answer bulletin, suggestion system manual, telephone technique manual, the company annual report, "Serving the West," departmental handbooks such as "Rules Governing Gas Appliance Installation and Customer Electric Wiring Installations," "Lines" magazine, "Home and Community Service" pamphlet, the Company Story (induction manual), company policy bulletins, bulletin boards, the Foremen's Letter, the Supervisors' Letter, and various management reports.

Group meetings

From time to time, interdepartmental group meetings are held to hear feature lectures pertaining to the American way of life, or to view a motion picture that carries a wholesome message.

The commercial department conducts group meetings weekly. These meetings are scheduled for each Tuesday morning. Other departmental meetings pertaining to operating problems or policies are held on varying schedules and as the occasion demands.

Company library

The company library is maintained primarily to supply technical information and current technical publications to the company officers and employees. It is well-supplied with current news and technical magazines, including a current file of AMERICAN GAS JOURNAL, Edison Electric Institute publications, gas and electrical engineering publications, public utility reports, The Washington Review, manufacturers' association reports, the Kiplinger and the Kazmayer letters, special reports and bulletins, company reports and the reports of N.A.M., U.S. and local chambers of commerce.

A cooperative agreement is also in effect with the Denver Public Library to supply the company with a reasonable number of good library publications each week. These are checked out to employees on call. This library service is appreciated by many employees.

Employee classes

Where the organization of classes for instruction purposes saves time, money and effort, well-planned courses are now offered. Typical examples are electronics, first aid, fundamentals of electricity, modern

lighting (domestic), adequate wiring, salesmanship, electric appliance repair, gas appliance installation and service, refrigeration and air conditioning, job methods, selling home freezers, foremanship training, blueprint reading, industrial electricity, shop mathematics, and instructor training for foremen and journeymen who are assigned instructing responsibilities.

Foremen or skilled journeymen, who have been trained in the use of the instructing process and instructing methods, are designated as instructors. Visual aids are used extensively. Courses are well planned and supplemental instructional material, such as job sheets and handbook materials, are distributed to those enrolled.

Evening classes

The evening, or leisure time, program differs from the usual company classes in that architects, electrical dealers and contractors, gas appliance dealers, and their employees are invited to enroll along with Public Service Company employees. Cooperation of the dealers and builders and of the union trades was solicited through the Rocky Mountain Electric League, Electrical Dealers Association, Electrical Contractors Association, the Rocky Mountain Gas Association, Heating and Plumbing Contractors Association, the United Brotherhood of Electrical Workers, and individual contractors and dealers.

These courses are of the short unit type, ranging in length from six to twelve weeks. The number of class offerings and the attendance is at the peak from November through February.

While this feature of the program was introduced as late as 1947, the effect of dealer, contractor good will is already making itself apparent. Where electrical dealers and contractors formerly considered the gas and electric utility company a competitor, they now think of the company as a cooperating agency. They seek technical advice and assistance and accept it when it is offered. Installation practices have been greatly improved and the quality and amount of customer service has also improved. This in turn has resulted in fewer utility service calls and fewer complaints from the customers.

Company employees too have profited by their association with employees of electrical and gas dealers and contractors. All gained a wholesome respect for the other fellow's enterprise. These attitude changes are influencing better trade and better customer relations.

Exclusive evening classes

Some evening classes are offered for company employees only. In this group are such courses as public speaking, first aid, electronics, gas appliance installation and service, etc.

Study groups during working day

Many classes are operated on company time. These are of two kinds: conference type or discussion meetings and technical courses. The conference groups are usually led by the department head or a trained conference leader. The technical courses are taught by expert technicians.

Examples of the conference type meetings are those that deal with sales, lighting practice, foremanship conferences, job analyses, work simplification, Company procedure changes for division managers, etc.

The electric appliance repair and gas appliance installation courses, first aid training, electric meter servicing and repair, fundamentals of electricity and similar subjects are continuing activities.

Foremanship conferences

Attendance at foremanship conferences is considered a regular duty or responsibility of the foreman in some divisions of the company. These conferences are manned by well-trained conference leaders who are skilled in conference leading methods and techniques. Conference rooms have been provided to accommodate from ten to fifteen supervisors. The schedule is usually arranged so that each group will meet for three hours every other week. Conference topics include analysis of foremanship responsibilities, analysis of operating problems, labor turnover, working conditions, cooperation, interdepartmental relations, personnel procedures, job analysis, instructing procedures, giving orders, interpreting the labor agreement, records and reports, etc. This activity is improving foremanship, reducing personnel problems, and is making foremen a part of management in practice.

Employment training

On-the-job training is carried on in all departments. Trainees are rotated through a series of job experiences which are determined by job analysis and job requirement studies. This program reaches most levels of technical employment.

The cadet gas engineering and the electrical engineering programs are also maintained on the job rotation plan similar to other on-the-job training schedules.

The gas school is an entity in itself. Five laboratories or shops are utilized to teach pipe fitting, regulator and meter installation, space heater installation, appliance installation and service, domestic regulators and controls, and industrial controls. The school operates on a seasonal basis, usually from March through June. Employees are selected on the basis of training needs and attend on company time. Five instructors devote about half time to this activity when the school is in operation.

A recent addition to the training program is a mobile training unit. It serves to carry training demonstrations and safety and company information programs to gas street crews and isolated gangs who would not otherwise participate in any training program. The instructor plans his route to pick up four or five men at one location, a few more at the next location, until the bus is loaded. Next he proceeds to a quiet curbside or nearby city park where the instruction is presented. Following the instruction, the men are returned to their jobs in the reverse order. Minimum job time loss is experienced by this method.

Supplemetal training

All on-the-job trainees, as well as other employees, are encouraged to carry on job supplemental training in university extension divisions and vocational schools, and in approved correspondence schools. This applies to courses reasonably related to the work of the employee and directly related to various phases of the company activities. Company participation includes reimbursing the employee for one-half the cost of prior-approved extension and correspondence courses that have been completed in a satisfactory manner. The executive department head is responsible for approval of such courses. At this writing, forty-three employees are pursuing such courses under the company participation plan.

Customer training

Classes for homemakers are conducted daily in the Electric Institute and the Gas Hospitality House. These rooms are equipped with comfortable chairs and demonstration equipment. Two complete electric kitchens, modern lights and electric appliances are used for demonstration purposes in the Electric Institute. A complete gas kitchen and modern gas appliances are used in the Hospitality House. Both are equipped with a stage and visual aid equipment. Approximately ninety people are accommodated daily in each of the centers.

Customer relations training

Employees who deal with customer contact work or work on the customer's premises receive a unit of instruction on customer relations. This unit emphasizes the fact that each company employee is an "ambassador of good will" and that each employee is a company public relations officer.

From the customer's point of view, the employee is the company. This means that the customer forms his opinion of the company and all of its employees by the action and performance of one or several company men with whom he comes in contact. The customer judges the employee by his appearance, his friendliness, his willingness to be helpful, his knowledge and ability to perform work on the customer's premises, his self-control when faced with criticism and his ability to "put over" the right instruction or information to the customer. When the employee realizes that he is being judged as an individual, he becomes aware of his responsibility for maintaining good customer relations.

Employees who regularly contact the public are schooled in the techniques of maintaining good customer relations. In complaint cases, they are taught how to get the facts from the customer and from the company's records, and how to explain the facts to the customer. They are taught not to say "It's the company policy," "Our rules don't permit it," etc. The customer is not interested in company rules and policies. He is only interested in a square deal. In addition to customer contact techniques, these employees are given experience and information in the fundamental operating methods of the company.

By such means, the employee has developed pride in the organization and a feeling that the standing of the company depends on his personal performance.

The results of these continuing activities have been gratifying.

Safe Practices in Distribution of Natural Gas

by L. G. Hanna
Division Superintendent
The Peoples Natural Gas Company, Pittsburgh

BECAUSE of its convenience and availability, natural gas is being used more generally throughout the country for domestic and industrial purposes. With this use, specific and little recognized hazards have arisen owing principally to the fact that the public and the consumer lack knowledge of the explosive properties of combustible gases of all kinds.

During the past few years explosions have occurred in public and private buildings resulting unfortunately in a number of deaths and injuries. Such accidents can and will be prevented if and when the necessary precautions are taken in the construction of buildings and the installation and maintenance of gas lines and gas appliances, plus adequate supervision, inspection and education.

Many potential hazards have existed unrecognized in all industries until revealed by accident. The same condition has existed in the general community supplied with combustible gases.

Natural gas is tasteless, colorless and from many sources virtually odorless; it is lighter than air and non-toxic, except when carbon monoxide is formed by incomplete combustion. The specific gravity of natural gas generally ranges from about .60 to .68 when compared with a value of 1.0 for air under similar conditions of temperature and pressure. The explosive range when mixed with air is from about 4.8 to 15 per cent; that is, if the percentage of natural gas in air is below 4.8 or above 15 per cent, the gas-air mixture is is non-explosive. The most violent explosion occurs when approximately 9 per cent of gas is present in the gas-air mixture.

Gas manufactured from coal has a characteristic odor, disagreeable to most persons, is somewhat lighter than air, and is extremely poisonous because of its relatively high content of carbon monoxide. The carbon monoxide content ranges up to 25 per cent where carbureted water gas is employed. Its poisonous properties can be appreciated better when it is remembered that slight symptoms develop when the concentration of carbon monoxide in air reaches .05 per cent, and 0.2 per cent is definitely dangerous. The explosive range of manufactured gas-air mixture, 6 to 36 per cent, is much wider than that for natural gas.

A comparison of the properties of the two gases would indicate that natural gas is much less dangerous to distribute and utilize except for lack of its own distinctive odor.

In western Pennsylvania, gas companies have not for many years trusted the odor of gas alone as a means of leak determination, although Appalachian gas has always had a distinctively gassy odor. They make periodic inspections, at least twice a year, on all curb boxes, street openings of all kinds, including gas gate boxes, water gate boxes, sewer manhole openings, telephone and electric conduit openings. Where lines are near buildings, bar holes are made at intervals. All these openings are tested with a Wolfe Safety Lamp with aspirator or, for closer determination, an M.S.A. Explosimeter.

In investigations of consumers' gas odor complaints, the Wolfe Safety Lamp is used and, if no indication of leakage is found, the M.S.A. Explosimeter is used.

Our most serious accidents in recent years have been in cases where new construction was concerned. Modern methods of construction of buildings, service lines, and of backfilling over service lines, is being done with heavy equipment which subjects the small lines to abuses they were not designed to withstand. In order to keep installations of service as safe as possible, and without handicapping the contractors in their use of modern equipment, we have been insisting on the use of Dresser-type couplings instead of collars on service lines where it is necessary to use more than one section of pipe, and have also insisted on outside meter sets.

The following paragraph is taken from our list of recommended practices for the installation of service and house lines, which are furnished upon request to plumbers, contractors or individuals who may wish to install their own lines.

"Service lines should be run from curb box to a point approximately one foot from point of entrance to building to be served; a half swing, street all and ell, should then be installed on the house end of service line along with a riser of sufficient height to permit setting meter above ground outside building. The outlet pipe from meter should enter building above ground and should be considered part of the house line installation. That part of the house line extending from meter to inside of building should be installed by owner, or plumber or contractor, and should be carefully cemented both at inside and outside of wall."

We have been using that method of installing services and meters for nearly a year and have had no unfortunate incidents since adopting this method. We have had evidence, however, of what strain may be placed on a service line by too heavy or improperly compacted backfill. Backfill has settled in many instances necessitating our men to reset meters which had been canted by settlement indicating that service lines have settled two to four inches. If such settlement took place with underground entrance of service, it would probably not have been observed until service line had broken.

Setting meters outside also expedites meter reading, but the prime consideration in our using the method was that of safety to the consumer.

It has been suggested that the riser in service line to meter will deteriorate rapidly at ground level if not protected in any way. It is true that it probably will deteriorate more rapidly than if it were underground, but in the event it does leak, the gas will be vented into outside air and not into a hollow tile wall where quite often the first indication of leakage appears when a light switch is thrown on the second floor of a house where the service line entrance is underground.

Meter readers, once a month, or at whatever intervals meters are read, can readily observe the condition of riser, and advise consumer if replacement is indicated.

One problem we have in western Pennsylvania, and one that seems fairly common all over the country, is the lack of a uniform code for inspection of new installations of gas service lines and house lines. In some sections of the country, particularly the larger cities, local codes govern such installations. However, there is very little uniformity among these local codes and it is a constant cause of misunderstanding with plumbers and contractors.

It is the opinion of many that the gas industry should have a uniform code for inspections of installations of service lines and house lines, to be operated by a well-qualified agency which would probably tend to forestall local legislation.

In our construction of main lines, both high pressure transmission lines and low pressure distribution lines, we use welded construction almost entirely, using Dresser-type couplings occasionally.

Each welder whether a contractor's man or one of our own welders, after having passed necessary tests, are given numbers to identify them and each weld made by them must be stamped with this number.

After construction of line is completed, or sections thereof, each low pressure line is subjected to a 24-hour air pressure test of 25 pounds. Medium pressure lines, up to 20 pounds operating pressure, are tested to 100 pounds for 24 hours.

In the event test indicates leakage, where line has been backfilled, injection of an

(Continued on page 30)

Adapted from a presentation to New England Gas Association

Insurance Policies Must Specify Coverage to Assure Protection

by Leo T. Parker

Attorney at Law
Cincinnati, Ohio

THAT old quip about the "fine print" in insurance policies—and all other documents—rears in front of gas company executives at frequent intervals when they learn regretfully about the coverage they do *not* have. There have been enough instances of costly regrets to warrant urging the specifically written inclusion of every detail of coverage in the clauses of insurance policies.

One reader stated, "We have liability, burglary, theft, property, storm, fire, collision, indemnity and various other insurance. Recently one of our buildings was destroyed by fire. The insurance company has refused to pay the loss because of no clause in the insurance policy stating that this particular building was covered by insurance. I contended that the insurance company is liable because at the time I signed the application for insurance I *personally instructed* the insurance agent that I wanted protection on all the buildings and he promised that we would receive an insurance policy which gave this protection. I can produce witnesses who will testify that the insurance company's agent promised that the policy would cover all the buildings in this area, no matter where they are located. Can I compel the insurance company to pay the loss?"

Agent of insured, not of company

According to a late higher court decision, the answer is *no*. First, it is important and well-settled law, which various higher courts uphold, that an ordinary or special insurance agent is agent of the insured, not an agent of the insurance company. This is so, although the insurance company pays the agent a salary or commissions on premiums paid to the company. The insurance company is not at all liable for promises of protection made by the ordinary or special insurance agent.

All readers should remember this: *Irrespective of what an insurance agent says and no matter what protection you believe the insurance policy affords, you must rely exclusively upon the protection defined by the clauses in the policy.* See West v. Employers Casualty Company, 178 S. W. (2d) 168.

It has been shown that an insured requested an insurance agent to issue a policy covering robbery insurance on the outside and on the inside, and also burglary insurance. The insurance agent notified the insured by letter that the policy included this complete and desired coverage. However, the policy did *not* include the desired coverage, but the insured kept the policy believing that it gave protection promised by the insurance company's agent. When a loss resulted from burglary the insurance company refused payment, and the policy holder filed suit. See State Corporation v. Travelers Indemnity Company, 30 S. E. (2d) 377.

The higher court refused to hold the insurance company liable and said that when an applicant for insurance receives a policy that does not conform to representations made by the company's agent, he must notify the insurance company of the error within a reasonable time.

In other words, retention of the policy by the insured, without objection, is regarded by the higher courts as an *acceptance* of the policy with the protection *limited by wording of the policy*.

Reasons why policy may be void

There are many reasons why an insurance policy may be void and have absolutely no value for protection against losses.

A review of recent higher court law suits discloses that an insurance policy is void (1) if the insured secured the policy through erroneous, untruthful, fraudulent or deceitful statements made in the application; (2) if the loss resulted from gross negligence or unlawful acts of the insured or his employee; (3) if the testimony proves that the insured or his employee violated any clause or term of the insurance policy; (4) if the insured was performing an unlawful act when the damage or loss resulted; or (5) if the insured increased the insurance company's risk.

Hence, it is quite apparent that numerous situations may arise under which an insured may have paid insurance premiums on insurance policies for many years, yet no adequate protection is provided by the policy.

Of course, the law is applicable to insurance policies held by gas companies and also to policies held by gas company officials and employees on their own personal real property and chattels. It is particularly important that officials and employees who interview, or in any manner use their residences for any business purpose, have a rider clause in the policy to this effect. Otherwise, the policy is void. This is so because the courts hold that one who uses a residence for business purposes increases the normal risk of the insurance company and thereby renders the policy void.

Franchise is broadly construed

Another reader asked, "Do the higher courts broadly construe assigned gas franchises in view of allowing the present gas company to earn a reasonable profit?"

According to a late higher court decision, the answer is yes. This is so, although the original franchise is assigned and reassigned to other gas companies. Also, a present franchise holder usually may rely on increases authorized by the state commission.

For example, in the leading case of Kentucky Utilities Company v. City of Paris, 35 S. W. (2d) 873, the testimony showed that a city signed a gas franchise to a gas company. Soon afterward this gas company sold its franchise to the Paris Gas and Electric Company, and ten years later the latter company assigned the franchise to the Kentucky Utilities Company. The franchise expired, by its terms, eleven years after this latter assignment. Finally, when the franchise expired, a new franchise was given which, however, did not fix the gas rates, but left it to the public service commission to determine and prescribe a "reasonable" rate for the service. Pending a final determination of the rate, the public service commission agreed that the gas company should be authorized to charge a specified rate per thousand cubic feet for supplying gas from the facilities then operating, but when certain additional facilities were provided the gas company would be entitled to increase its rate ten cents per thousand cubic feet. The additional facilities were furnished and the increased rate has been charged and collected since.

Litigation developed over the question of whether or not the gas company was within its legal rights to increase its rates ten cents. In holding the gas company to be within its rights, the court said, "The city of Paris was not a party to the agreed orders, but it had granted a franchise by which it had agreed to permit its grantee (gas company) to charge a higher rate. . . ."

Consumer must prove meter incorrect

Another reader asked, "If a consumer of gas is dissatisfied with the amount of

his gas bill and claims that the gas meter registered incorrectly, what testimony must he give to compel the gas corporation to refund the alleged over payment?"

The consumer must prove conclusively that the meter is defective and incorrectly registered the volume of gas he used, otherwise he is not entitled to a refund.

In the case of Behrend v. District of Columbia, 79 Atl. (2d) 399, the testimony showed that Behrend has owned for many years a commercial building on which his monthly bills were fairly equal in amount. Protesting that the amount of his last few bills was far too great and that the bill was erroneous, Behrend paid the bills to prevent shutting off the supply, and then brought suit to recover the amount so paid, less the average amount of the bills in previous years. Behrend contended that the meter was defective and incorrect. However Behrend did not prove *conclusively* that the meter registered incorrectly. Therefore, the higher court refused to hold that he could collect a refund.

The court held that mere proof that a gas bill for one or a few months is many times more than a normal or average bill will not entitle a gas consumer to a refund or to a verdict that the meter is defective.

What is valid power?

"To what extent is a state law valid which delegates power to a person or commission to decide the validity of gas rates? Also, what is the law with respect to delegation of authority to settle disputes between gas corporations and consumers without going into court?"

Frequently, in answer to that question, the validity of a law of the latter nature is attacked on the grounds that by authorizing state officials or commissions to settle disputes, the natural judicial power of the courts is violated. However, this argument is not sound.

For example, in the case of State Porterie, Attorney General v. Grace, 166 So. 133, the validity of a state law was attacked which delegated power to settle and arbitrate disagreements between holders of gas and mineral leases.

The attorney general contended that the statute is unconstitutional because it is an attempt to confer legislative and judicial powers upon the register of the state land office, and upon the governor, to settle by agreement with the holders of gas and mineral leases all questions or controversies arising over the interpretation of such leases and the performances of the covenants, conditions, obligations and stipulations thereof.

In affirming the constitutionality of the law, the court said, "In the very nature of things, the officers who are vested with the authority to make contracts of lease as the agents of the state and to exercise some discretion in fixing the terms and conditions of such contracts ought to have the authority and the necessary discretion to determine whether the terms and conditions of the contracts are complied with. The exercise of such authority is only an administrative function, and does not form part of the 'judicial power' referred to in the Constitution as being vested in the courts."

Therefore, it seems that the higher courts are in accord with the principle of law that a state law is valid which provides that the courts will not place their judgment above that of the executive or administrative officers who are designated by a state law as the agents of the state in the determination of matters peculiarly within the knowledge of such officers.

It is interesting to review the decisions rendered by the United States Supreme Court with respect to how far state legislatures may go when delegating authority to officials and commissions.

In one case, Union Bridge Company v. United States, 204 U. S. 364, the United States Supreme Court applied this doctrine, saying, "Legislative and judicial powers are not unconstitutionally delegated. . . ."

With respect to rate delegation see Hampton Jr. and Company v. United States, 276 U. S. 394. The United States Supreme Court gave this illustration of the rule, "If Congress shall lay down by legislative act an intelligent principle to which the person or body authorized to fix the rate . . . is directed to conform, such legislative action is not a forbidden delegation of legislative power."

Basis for gas rates

"What are the legal differences" a reader asked, "between lawful gas rates and confiscatory rates, as based on modern high values of a gas corporation's property? Can money expended for improvements be used as a gas rate base, if such money was in any manner, charged to operating expenses? Are state laws invalid which base gas rates on old value of a gas company's property?"

The answers: Present high values must be reasonably used when establishing present gas rates, otherwise such rates are confiscatory. This rule is applicable to old state laws which limit gas rates.

The modern state courts recognize that the decisions of the United States Supreme Court must be necessarily relied upon when deciding gas rate controversies. In Bangor Water Company v. Public Service Commission, 82 Pa. Super, 48, 55, the state court said, "The decisions of the Supreme Court of the United States require us to base the fair return upon its (property) present value; that is, its reasonable value at the time it is being used for the public."

Also, in the case of Pennsylvania Public Utility Commission v. Peoples Natural Gas Company, 44 Atl. (2d) 614, the public service commission of a state approved a gas rate base and allowed a return of six and one-half per cent on such base. The testimony showed that the gas company had drilled wells and made other expensive additions to its property but on its books had charged these additions to "expense of operation." The higher court held that the commission had properly refused to consider these items an addition to the value of property affecting the rate base. This court stated that the company, by disbursing part of its earnings as operating expense, recouped the cost from gas consumers and hence these expenses were not "investment" items. The higher court held that under these circumstances the gas company could not later be permitted to declare that such expenditures were "capital" investment on which gas consumers must pay an additional return.

However, this higher court indicated that the gas company's rate of return of six and one-half per cent is not unreasonably high and should not be reduced merely to compensate for a relatively high finding as fair value upon which the rate was to be applied.

"In our former opinion" the court commented, "we said that a rate of return of six and one-half per cent was not unreasonably low; we are not now in position to say that it is unreasonably high as applied to a utility whole sole product is natural gas."

For comparison, see Queens Borough Gas & Electric Company v. Prendergast, 31 F. (2d) 339. In this case the validity of a state law was contested which limited the rate chargeable by gas companies in cities having a population over 1,000,000.

A gas company contested the validity of this state law on the grounds that the present cost to produce gas is about equal to the price which it is permitted to charge for gas sold to consumers in the city.

It is important to know that the court held the statute invalid on the grounds that it confiscated property "without just compensation."

And, in the case of Northern States Power Company v. Board of Railroad Commissioners, 298 N. W. 423, the court said, "Fair value includes the appreciation in value of the utility's property where the allowance of the appreciation will *not* produce a rate unjust to the public."

Borrowed Funds Expected to Cost More with Arrangements Somewhat Difficult

by John F. Falvey

Financial Editor

GAS company managements presumably will have to pay more for borrowed funds, both short and long term this Fall. In fact, they might do well to cover their temporary cash needs as soon as possible, since bank borrowings might prove somewhat more difficult to arrange than they are at present.

John F. Falvey

The underlying reason is the recent decision of the Federal Reserve Board to tighten credit. As a result, member banks have had to borrow heavily from the Reserve banks. Any further increase in instalment and security loans, at the pace shown during recent months, would strain the position of the banks with the Reserve system and cause interest rates to go higher.

Leading banking authorities expect the prime rate on commercial borrowings to rise from the present three per cent to at least 3¼ per cent and possibly to 3½ per cent. The trend actually might get under way before this issue goes to press.

Such a hike in interest rates would represent the sizable jump of anywhere from eight per cent to sixteen per cent.

The new Reserve policy, according to well qualified observers, is a flexible one aimed at making credit easily available at low cost in time of deflation and at tightening credit and increasing its cost during periods of favorable economic conditions.

Clear evidence that the Reserve Board now seeks flexible but limited changes in interest rates is shown, these observers cite, by the action of the Reserve banks in purchasing large amounts of Government securities late in July and early in August, and then sharply paring their portfolio holdings as the money market eased.

How large investors feel about the situation was evidenced by the recent action of holders of seventeen per cent of the called 1⅞ per cent Government certificates in taking cash rather than accepting exchange of new two per cent obligations.

While pressure of new money demands is expected to combine with the changing Reserve policy to spell higher interest rates on all types of borrowings, the stock market has gone the other way around and has been taking in stride adverse news such as strikes and new share financing.

A strong case in point was the action of the stock of one of the large oil companies in retaining its market price in the face of a financing announcement which will mean issuance of three million additional shares. Such disregard of possible dilution threats to share earnings is unusual, but it stems from continuing substantial institutional buying of stocks and from a spreading conviction among investors as a whole that the trend of business over the months ahead will be sufficient to maintain corporate profits at a fairly high level.

Despite the fact that common stock prices now are at about the highest level of the past 22 years, the advance in quotations has been just about sufficient to offset the drop in purchasing power of the dollar. On the basis of the *old dollar value,* share prices are practically unchanged from 1939 levels.

Strike losses have caused a few of the companies to adopt a more conservative dividend policy, but increases still exceed the combined number of reductions and omissions. A Department of Commerce compilation recently released showed that cash dividend payments of $542 million by corporations in July 1952 were 1.3 per cent above the total distributions in the identical 1951 month, compared with a year-to-year gain of four per cent for the first seven months of this year. This compares with a gain of 5.8 per cent revealed by the New York Stock Exchange for 929 listed common stocks in the first half of 1952.

One factor in the institutional search for equities which should be borne in mind is that such buying is concentrated largely in stocks of companies which are fairly soundly situated, which have a proven record of earnings and dividends for the most part and whose outlook seems satisfactory. This means that the buying must be selective, with the result that most of it is believed to have been concentrated in no more than 100 stocks on the New York Stock Exchange, a paltry number in relation to 1,061 total common stocks on the Big Board.

The action of the averages reflects

(Continued on page 30)

INDEX OF YIELDS : SELECTED UTILITIES STOCKS

	Aug. 1952	July 1952	June 1952	May 1952	Apr. 1952	Mar. 1952	Feb. 1952	Jan. 1952	Dec. 1951	Nov. 1951	Oct. 1951	Sept. 1951
Natural Gas Transmission Companies	4.10%	4.01%	3.98%	4.05%	4.08%	4.03%	4.36%	4.32%	4.50%	4.51%	4.67%	4.67%
Natural Gas Transmissions & Distribution Companies	5.30	5.26	5.28	5.32	5.34	5.14	5.29	5.17	5.33	5.30	5.36	5.09
Manufactured & Mixed Gas Companies	4.70	4.89	4.84	5.06	5.13	4.99	5.18	5.05	5.25	5.36	5.32	5.43
Class "A" Electric Companies	5.40	5.49	5.60	5.54	5.65	5.51	5.61	5.53	5.80	5.78	5.83	5.74
Class "B" Electric Companies	5.46	5.51	5.55	5.57	5.61	5.48	5.70	5.64	5.76	5.82	5.78	5.74

This is a straight arithmetical index of comparative yields obtainable on a selected group of gas and electric utility industry common stocks.

The companies comprising this index have been selected by the AMERICAN GAS JOURNAL as providing a representative cross-section of each industry, from the standpoint of geographical diversification and of the relative importance of the individual companies in their areas.

No effort has been made to weight the average to give effect to changes in capitalization or in dividend rates because the yields afforded on the issues reflect such changes. The index is designed to show the rate of return and not necessarily market movements on the stocks comprising it.

This index is compiled from: natural gas transmission companies, 5; natural gas transmission and distribution companies, 5; manufactured and mixed gas companies, 4; class "A" electric companies, 4; class "B" electric companies, 5.

Specialized Engineers for the Natural Gas Industry

by Frank H. Dotterweich
Director, Division of Engineering
Texas College of Arts and Industries

NATURAL gas engineering, as offered by the engineering division of the Texas College of Arts and Industries, Kingsville, Texas, was initiated in September 1935, by a group of men in the natural gas industry who foresaw the present phenomenal growth of the industry and planned a program at that early date whereby specialized engineers, trained primarily in natural gas operations, would be available as the industry developed.

This course, initially referred to as "a natural gas engineering school in nature's laboratory" by the late E. Holley Poe, was introduced through publication of an article with that title in AMERICAN GAS JOURNAL, May 1940. This work was brought up to date by the JOURNAL, in May 1948, with "Trained Engineers for an Expanding Natural Gas Industry."

Now, the college reports further progress of the course, with the attainment of accreditation by a national body and the introduction of graduate work.

The work in natural gas engineering was planned and is being carried out under the supervision of an industry committee of the natural gas industry, led by Frank C. Smith, president, Houston Natural Gas Corporation, and president, board of directors, Texas College of Arts and Industries. Besides Mr. Smith, others who have given of their time and counsel are Chester L. May, vice president, Lone Star Gas Company and N. C. McGowen, president, United Gas Corporation. Through their outstanding efforts, the college has acquired the most complete natural gas engineering laboratory in the country.

R. R. Suttle, managing director, Southern Gas Association, recently organized and heads a special industry committee through which the natural gas companies of the Southwest will present to the college a complete all-year air conditioning unit to be used for research study and to air-condition the new engineering building.

The program in natural gas engineering was in two parts. First, the course was to develop to the level where it could receive accreditation by the Engineers Council for Professional Development; and second, the development of a graduate program.

The graduate phase of the program was initiated in September 1951, after ECPD accreditation. Since the accreditation is for petroleum and natural gas engineering, the original content of the course was extended so that it could meet the broader requirement. Thus, the natural gas industry has two such courses accreditated by ECPD in petroleum and natural gas engineering, the other being at Pennsylvania State College.

New completely air-conditioned engineering building at College of Arts and Industries, Kingsville, Texas.

With the firm foundation of accreditation in the natural gas curriculum, the graduate program leading to a Master's degree was initiated. Now, a student can proceed through his undergraduate and graduate work at the college, this being supplemented with valuable practical experience by employment in industry during the summer vacation.

The college, located in the midst of the second largest natural gas field and the largest gas condensate field in the country and with a high pressure gas condensate well on the campus, affords laboratory field studies of invaluable aid to the student.

The degree in petroleum and natural gas engineering requires the completion of 157 credit hours taken over a period of four and one-half years. The student may parallel this work and obtain a reserve officer's commission in the Reserve Officers' Training Corps of the college, activated in the fall of 1951.

A total of 184 graduates, as shown in the following table, have selected this work and obtained their degrees in natural gas engineering without the help of any fellowships by the natural gas industry.

These graduates have found employment throughout the United States and South America, being distributed equally in the employ of gas utilities, gas production companies and in the chemical industry.

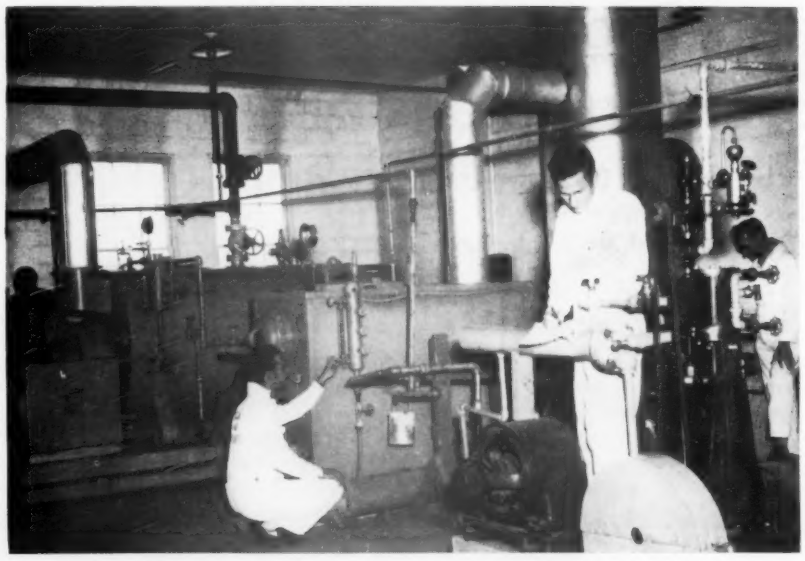
Year	*Graduates*
1938	9
1939	13
1940	12
1941	17
1942	9
1943	7
1944	3
1945	—
1946	2
1947	8
1948	16
1949	16
1950	35
1951	37
Total	184

The graduate program, with a Master's degree in engineering in the field of natural gas engineering, was initiated in September 1951, and although no publicity was given this work nor fellowships made available to the students, six applied for admission. Five graduate students have absolved their entrance requirements and have worked on these problems:

"Pilot plant study of the adsorptive properties of soils for natural gas odorants." This work included a study of the properties of various soils to adsorb a commercial odorant from natural gas. Research work was conducted by Charles Cable with equipment donated by Lone Star Gas Company.

"Laboratory study of the adsorptive properties of soils for natural gas odorants." This work parallels the pilot plant study and includes varying rates of flow and the development of a rapid test (by means of dye adsorption) whereby the ability of a soil to remove various odorants may be predicted.

"Research on the installation and op-



Students of natural gas engineering making combustion investigations in the laboratory of College of Arts and Industries.

erating characteristics of absorption air conditioning equipment." This is a study of the application of absorption gas-fired air conditioning equipment, including the newer type water cooling towers operating with such equipment. Research is being conducted by Paul Treptow with laboratory equipment donated by the natural gas companies of the Southwest.

"A study of the subsurface water resources of the lower gulf Coast region." In many locations in this area, the limiting factor of industrial gas expansion is the availability of water. This work will immediately make available the amount of subsurface water being withdrawn in the location in question and the rate at which it is being replaced. This work is being expanded to include storage of surface water in subsurface sands by injection well operations. Lawrence Elling is the investigator.

"An economic study of the distribution of natural gas in various locations in Mexico." This distribution problem in natural gas operations as encountered in various locations throughout Mexico is being pursued by Marco Gutierrez-Perez.

As the graduate work develops it will be limited to an active registration of about ten graduate students, the present capacity of the division of engineering for advanced study. This means of industrial research offers the natural gas industry an excellent opportunity whereby its technical problems may be solved in the laboratory adjacent to the gas production fields.

The short course in gas technology offered by the college and sponsored by Southern Gas Association continues to be a popular method whereby gas engineers of the South assemble yearly to refresh themselves in the recent dvelopments in the gathering, conditioning, transmission and utilization of natural gas. The enrollment in the course is limited to about 200 representatives of member companies of Southern Gas Association.

The registrations for the first seven years of the short course are as follows:

1946	190
1947	154
1948	196
1949	185
1950	212
1951	213
1952	215

Leading experts in the various phases of gas engineering conduct classes throughout the three-day meeting and, in addition, inspection trips are arranged to the variety of industrial plants in the area. Other features include an inspection trip to the famed King Ranch and a Texas style barbecue at the Humble Camp on the King Ranch. A bound volume of the papers delivered records the yearly presentations.

The program, now complete with graduate work which includes research and development on problems of importance to natural gas industry, provides the industry with gas engineers who have been awarded graduate as well as undergraduate degrees.

Only with a continuous supply of adequately trained engineers graduating from institutions such as ours can the country derive maximum benefits from the use of the perfect fuel.

American Gas Fundamentals

OUTLINE

NATURAL GAS
- *Geology
- *Drilling and completion
- Methods of estimating reserves
- Chemicals from gas

MANUFACTURED GASES
- *Coke oven gas; producer gas, blue gas; carbureted water gas
- *Reformed gas
- *Hi-Btu oil gas
- Interchangeability

LIQUEFIED PETROLEUM GASES
- *Sources, properties and uses

BASIC GAS LAWS
- *Perfect gases
- Supercompressibility

TRANSMISSION
- *Pipe lines
- *Corrosion and pipe protection
- Compressor stations
- Hydrates and dehydration
- *Gas conditioning
- Flow formulae
- Orifice meter measurement
- Pipe coatings and protection methods

GAS STORAGE
- *Methods of storing gas

GAS DISTRIBUTION
- *System design and operation
- *Pressure regulation, part 1
- *Pressure regulation, part 2
- *Leak detection and control
- *Metering
- Measurement and accounting
- *Odorization
- Customer service
- Competitive fuels

GAS UTILIZATION
- Combustion characteristics
- Domestic
- Commercial
- Industrial
- *Principles of absorption refrigeration

CONVERSION PRACTICES

MANAGEMENT PROBLEMS AND POLICIES
- *Corporate structure
- Public utility regulation
- *Public relations
- Theories of rate making
- Rights-of-way

*** Indicates chapters published since January 1, 1951; available without charge to new subscribers to American Gas Journal.**

How to Use the Material

American Gas Fundamentals *is a comprehensive compilation of basic gas facts to guide any gas utility employee toward a broader understanding of the industry as a whole.*

The series is designed to be removed from each current issue of AMERICAN GAS JOURNAL *and filed in a ring binder where it may be accumulated into a text book of permanent usefulness. Material should be filed under the major subject head appearing in the upper right hand box at the head of each chapter.*

Public Utility Regulation

THERE is nothing new about the idea that public utilities are subject to regulation, to protect both those who use and those who provide the capital necessary to furnish the service. Early in the development of the English common law—*upon which are based so many of our present-day fundamental concepts of American government and the mutual responsibilities of those whose efforts are joined in the functioning of our modern economic and social order*—it was recognized that the proprietors of certain businesses occupied such strategic positions of power in the life of the times that special and additional obligations to the public at large had to be impressed upon them. Thus, innkeepers, ferrymen, stagecoach operators, millers, and others were from time to time held to be "affected with a public interest" and, therefore, were required to serve all comers reasonably, adequately and without discrimination.

The effective enforcement of those duties—to furnish adequate and non-preferential service at reasonable and non-discriminatory rates—is the fundamental objective of all present-day regulation of public utilities. Furthermore, the very factors—great economic importance of the business to the public and the possible abuse of monopoly power—which led to the imposition of extraordinary obligations upon the innkeepers and millers of an earlier age are those which have resulted in our modern suppliers of transportation, communication, water, electric and gas service being regarded likewise as "common carriers", "public callings", or public utility enterprises.

Early Regulation

The regulation of utilities, therefore, does not have its roots in some blueprint by architects of modern "reform" or in the theories of philosophers of the New or the Fair Deal; rather it stems basically from legal and economic concepts developed as a part of our great heritage of Anglo-Saxon tradition and precedent. We, like our forefathers, have relied generally—at least until very recent years—upon what Adam Smith termed "the invisible hand" of free competition to guide men pursuing their own individual interests into courses which would promote the common economic good. But, like the English jurists of the seventeenth and eighteenth centuries, we have not hesitated to enforce special safeguards to protect the public interest whenever a particular type of business enterprise has become, at the same time, both indispensably necessary to the welfare of its customers and capable of engaging in monopolistic practices.

It is not mere coincidence that the group of undertakings which we now know as public utilities—using that term broadly to embrace the major forms of transportation as well—are all more or less naturally monopolistic, either because the public convenience is better served by a single supplier or because the behavior of cost leads to the furnishing of the service by one or a few firms in a given area, often under exclusive franchises granted by the public; and that all are of vital importance in the economic life of the community. In addition, it has generally been recognized that the services performed by the privately-owned but publicly-regulated utilities could—and, if need be, would—like the postal service, be rendered by instrumentalities of the public itself. Thus it was that, as turnpikes and canals were superseded as the backbone of transportation in the United States around the middle of the last century, efforts were made, after a few not-conspicuously-successful experiments in public operation, to regulate the railroads which had by then demonstrated both their superiority and their monopolistic characteristics. Similarly, as highway and air carriers have come to assume roles of increasing importance and influence in our national economic life, they too have been added to the group of regulated undertakings.

First State Commission

But, while the basic rationale and purposes of public utility regulation have their origins in the ancient English common law, the modern application of such regulation through the commission-type of administration is a distinctly American innovation. Commissions were first used in some of the New England states in the early days of railway building to lay out routes through counties and to control the taking of land for right-of-way purposes; and they were later adapted for use on a state-wide basis—notably in Massachusetts in 1869—to accomplish a sort of regulation through the collection and dissemination of information regarding the operations and practices of the railroads. The first efforts to actually enforce the obligations of railroads and certain other businesses—including warehouses and grain elevators—to serve adequately, at reasonable rates, and without undue discrimination, however, took such forms as recourse to lawsuits, the use of charter and franchise provisions, and the enactment of specific statutory requirements, like those established in a number of mid-western states during the so-called Granger period of the 1870's.

While those efforts were noteworthy, particularly since they gave rise to a group of extremely important cases in which the Supreme Court of the United States, in 1876, upheld the constitutionality of such regulation by state legislatures, it was soon recognized that the complex economic questions involved called for continuous, expert and flexible treatment which, in the nature of the case, could not be provided by any of the then-existing mechanisms of control. It was to meet these needs that the commission-form of regulation—employing a full-time, continuously functioning group of administrators, operating under general statutory standards enacted by the legislature, implemented by an expert staff, and with authority to enter orders which had to be followed under penalty—was developed. Railroad commissions were created, first in the states and then at the Federal level when the Interstate Commerce Commission was established, to regulate those aspects of railway operations which, under the dual system of government provided for under our Constitu-

tion, could not be regulated effectively, if at all, by the states.

Because so much of our regulatory law, practices and experience has developed initially in the field of transportation, it may be worthwhile to call attention at this point to the fact that the first effort to regulate interstate railroads, under the aegis of a Federal commission in 1887, took the very simple and direct form of merely empowering that agency to enforce the old and traditional obligations with respect to adequate, reasonable and non-discriminatory service and rates, together with authority to gather information through the medium of reports from the carriers.

Federal Authority in Transportation

It soon became apparent, however, that this basic legislation was inadequate, with the result that a long series of amendments, culminating in the Transportation Act of 1920, was necessary to effectively implement the original purposes. Not only did those amendments plug loopholes in the ability of the Interstate Commerce Commission to deal directly with rates and service by enabling it to prescribe reasonable and non-discriminatory rates, to suspend proposed rate increases, and to control both certain services and the extension and abandonment of facilities, but it also conferred upon the Commission other ancillary but necessary powers over such matters as accounts and the issuance and sales of securities—the former having early been recognized as a necessary implement to the securing of accurate information and the policing of regulation, and the necessity of the latter having been demonstrated as a means of safeguarding financial management and maintaining the credit which the roads required if they were to be able to furnish service adequate to the requirements of the public.

Likewise, during that same period, there had been amply demonstrated the difficulties—to all concerned and from almost every point of view—of dual regulation by both state and Federal authority, each operating within its own field of intra- and interstate commerce, respectively, but necessarily impinging upon one another, especially with respect to rates, when the same carrier operated, as virtually every major railroad system did, in a number of states and handled both intrastate and interstate passengers and freight. In the transportation field those difficulties have been resolved through the substantial subordination of state to Federal regulation because of the largely national aspect of most of the problems encountered.

Thus, under the Transportation Act of 1920, the authority given the Interstate Commerce Commission over railroad finance and extensions and abandonments of line was exclusive, while in the field of rates its powers are dominant to those still exercised by the states over matters of local concern. By and large, this concentration of function in the Federal regulatory agency has been followed also when legislation has been enacted adding motor and water carriers to the group of transportation agencies coming under the jurisdiction of the Interstate Commerce Commission in 1935 and 1940, respectively, and in providing for the regulation of air carriers by the Civil Aeronautics Authority and Board in 1938.

Other Utilities Added

As municipal water suppliers (during the last 50 years increasingly converted to public ownership and operation), manufactured and natural gas enterprises, electric central station service, urban transit systems, telegraph and telephone companies successively developed and demonstrated both their economic importance and their naturally-monopolistic characteristics, during the latter half of the last century in this country, it was natural and well-nigh inevitable that they should have been added to the group of enterprises known as public utilities and thus subject to special duties and responsibilities to the public.

At first, their regulation was largely local, effected through franchises, ordnances and the actions of municipal officers. As the areas of their operations grew, however, it became necessary to provide for their regulation on a broader geographical basis. There developed, therefore, a movement which, between 1907 and 1911, brought about the creation of commissions having state-wide regulatory authority. At present, such commissions exist in every state of the Union and several territories, although there is some variation in the scope of their jurisdiction, as to both the types of utilities regulated and the particular business activities of the regulated utilities which they are empowered to control. In a few states a measure of local "home-rule" remains, with the state commissions performing, as in Ohio, essentially a review or appellate function.

Thus, public utility regulation has followed, to a considerable degree, patterns which had already been established in the transportation field, as to both the content and the mechanisms of control. And, as expansion and interconnection have extended certain utility activities beyond the borders of individual states—thus giving them national significance and rendering more difficult their effective regulation by any single state—there have been provided Federal commission controls in a number of areas, such as the regulation of interstate communications systems by the Federal Communications Commission under the Act of 1934, of public utility holding companies by the Securities and Exchange Commission under the Act of 1935, and of interstate wholesale electric and natural gas operations by the Federal Power Commission under the legislation of 1935, 1938 and 1942.

Thus far, Federal centralization of regulatory authority in supersession of state control has not gone as far in the public utility as in the transportation field; whether it will be thus extended remains to be seen. Those who, like the writer, believe that the best government is that which is closest to the "grass roots" and that Federal authority should be invoked only when the need has been clearly and convincingly demonstrated, hope that through cooperation and comity, state and Federal viewpoints, objectives and methods may be accommodated, conflicts minimized, and the pattern of progressive Federal centralization avoided. Certainly, state administration can be more responsive to local variations of conditions and therefore more desirable and economical; yet matters of real national interest require that over-all policies be worked out and applied in the exercise of the Congressional power over interstate and foreign commerce. To strike the proper balance is a matter requiring both economic wisdom and diplomacy of the highest order.

State and Federal Jurisdiction

Illustrations of what this involves, under our American system of dual government, are not hard to find in the regulation of electric telephone, and gas utilities, where both state and Federal commissions have varying degrees of authority over and responsibility for the control of their operations in the public interest.

Speaking generally, the scope of the regulatory powers of the state and Federal commissions is similar, if not identical, within the ambits of their respective jurisdictions. Much the same problems, likewise, have developed and substantially similar legislative and administrative methods of dealing with them have been utilized at both the state and Federal level. Thus, the obligation upon utilities to charge just, reasonable and non-discriminatory rates is ordinarily expressed in state and Federal statutes in about the same language. The commissions are usually empowered to prescribe the form in which tariffs may be filed and to prescribe, after hearing, the maximum rate to be charged for a given class of service,[1]—and sometimes the minimum rate as well, to permit the direct elimination of any undue discrimination in charges for service.[2] To permit the necessary investigations to be made, commissions are ordinarily empowered to suspend proposed rate increases for varying periods of time;[3] and the burden of proof in justifying increased rates is usually placed upon the utility. Not infrequently they are authorized to direct the refunding of overcharges and the collection of undercharges, and to award reparations for rates later found to have been unreasonably high.[4]

In dealing with the level of rates—and thus with the net earnings of the utilities and those who have invested in them—both state and Federal commissions have been required by the courts to follow standards intended to work justice to both their customers and their owners.

Fair Return Rule

In a Nebraska railroad rate case, decided in 1898, the Supreme Court enunciated the famous "rule" that rates must be so fixed as to afford the regulated company an opportunity to earn a "fair return" on the "fair value of the property being used by it for the convenience of the public".[5] This laid the basis for extended controversy before both state and Federal commissions as to what constitutes a fair rate of return (now commonly related primarily to the yield on comparable investments competing for the investor's dollar and the historical cost of money to the subject company)[6] and as to the method to be followed in determining the fair value of the property, or rate base.

At the outset, it was counsel for the shippers (William Jennings Bryan) who advocated that the present market value of, rather than the original cost or investment in, the property should constitute the rate base. Subsequently, however, as the trend of price levels and construction costs turned upward, representatives of the consumers advocated the use of actual net investment, while the utilities contended for present value. Although substantial arguments can be made for the latter, in terms of the pure economic theory of competitive price and value, the hypothetical character, administrative cumbersomeness, and time-consuming procedures of the reproduction cost method have led to its general rejection by regulatory agencies.

The Federal Power Act established actual net investment as the basis for possible recapture and rate-making on Federally-licensed hydro-electric projects, and the Federal Power Commission's insistence upon this standard in its regulation of natural gas rates finally resulted, in 1944, in its being sanctioned by the Supreme Court in the famous Hope Case,[7] which has set the pattern for subsequent rate-making in various utility fields by both Federal and state commissions.

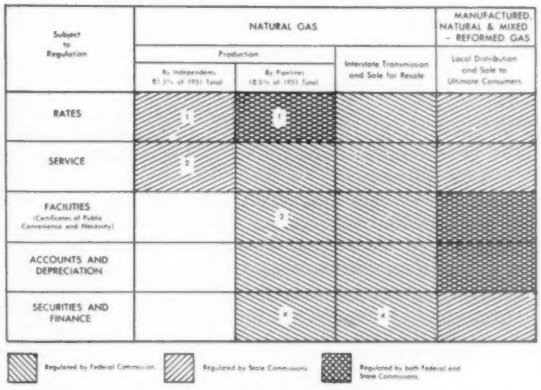
In attacking undue discrimination and bringing about a proper relationship of rates within a given level, the important problem has been that of allocating the various elements of cost so that charges may be reasonably related to the cost of rendering the particular service.

Closely related to the control of rate levels, which affect the credit of the utilities—and therefore their ability to attract capital and provide the facilities necessary to adequately serve their customers—is the regulation of securities and financial practices. In most states, commission-approval is required before securities may be issued and sold to the public. This ordinarily includes approval of the types, terms, conditions, and prices of securities with, however, exemptions for short-term and relatively small borrowings.

The Federal commissions likewise generally have securities jurisdiction, although such authority is not conferred upon the Federal Power Commission under the Natural Gas Act, while in the electric power field it possesses such jurisdiction only if the states in which the company is organized or operates do not and if the utility is not a subsidiary of a registered holding company, in which event its securities are subject to regulation by the Securities and Exchange Commission, which is also charged with responsibilities in the interest of investors generally under such statutes as the "truth in securities" Act of 1934. Other financial controls frequently encountered run to such matters as interlocking directorates and transactions between affiliates.

Because accounting and depreciation practices are basic instrumentalities of both information and control, most regulatory statutes, state and Federal, subject these matters to the jurisdictions of the appropriate commissions. They are most important in their relations to rate-making—in the determination of both the net investment

THE PATTERN OF REGULATION



[1] Minimum Sales Prices sometimes fixed by State Conservation Authorities.

[2] Volume of Production often controlled by State Conservation Authorities.

[3] Except facilities used exclusively for production or gathering.

[4] When regulated by Federal Power Commission effective for initial financing only through condition in certificates relating to facilities and service; when involving subsidiaries of registered holding companies, controlled by Securities and Exchange Commission.

[5] For 15 major pipeline systems.

rate base, on which the fair return is to be earned, and the annual operating expenses, which must also be recovered in the charges made for service—and to the processes of financial and securities regulation. On the whole, the provisions of the classifications and requirements established for particular types of utilities by the state and Federal commissions are substantially similar. Frequently they are identical in terms, although sometimes important differences in their results follow from differences in interpretation and application to a given set of facts.

The adequate and non-preferential character of the service which must be furnished to the public is also ordinarily dealt with in the laws providing for public utility regulation and conferring the necessary powers of enforcement upon the state and Federal commissions.

In the main, however, matters involving the details of individual services to ultimate consumers are the concern of the state commissions, which usually are fully empowered to deal with them in terms of local conditions, through the establishment of service standards, franchise provisions, and the like.

Certificate Provisions

The Federal agencies, however, through their powers to grant certificates of public convenience and necessity permitting the extension, enlargement and abandonment of facilities, are in a position to affect materially the overall characteristics of the service rendered. And, like the state bodies, the Federal commissions often have somewhat limited powers to require changes in facilities, and thus in service, by directing that electric systems be interconnected or that natural gas pipelines be extended to supply adjacent new market areas.

With so many parallel regulatory duties and responsibilities lodged in both state and Federal agencies often having jurisdiction, respectively, over the intra- and the interstate operations of the same utility, it would be surprising if instances of duplication, and even direct conflict, did not arise.

As stated earlier, in the transportation field such situations have commonly been resolved by the assertion and exercise of either exclusive or dominant Federal authority. That pattern, however, has not as yet emerged in the public utility field generally.

Some problems exist in respect of communications, where the allocation of facilities, investment and operating costs between interstate toll and local exchange service has been a matter of considerable concern and cooperative effort on the part of the Federal commission and the state agencies.

In the case of electric power, some questions regarding the control of accounting practices have arisen but, notwithstanding the fact that many electric systems cross state lines and the same companies often engage in both wholesale and retail transactions, direct collisions between state and Federal rate-making functions have been few and far between—due in large part, no doubt, to the fact that, while considerable amounts of electric energy move in interstate commerce, the rates for the resale of such energy have a relatively small impact on the overall revenues of the electric industry.

Distribution of Functions

Perhaps the clearest picture of the distribution of regulatory functions can be obtained from the accompanying chart that shows, in broad outline, the situation as it exists with respect to gas utilities, where the states usually regulate the rates, securities and service of the local distributors of manufactured, natural, and mixed or reformed gas —with some also active, from the standpoint of conservation, in the regulation of natural gas production—and where Federal regulation is effective over the interstate transportation of natural gas and its sale for resale in interstate commerce.

Partly because of the definite statutory limitations upon the jurisdiction of the Federal Power Commission, which are contained in section 1(b) of the Natural Gas Act, and partly because the industry is so organized that the same companies are not usually engaged both in local distribution to ultimate consumers and in interstate transportation and sale for resale, it has been possible to draw rather sharp and definite distinctions between the respective areas of state and Federal regulatory authority. In some respects, however, even here—notably in the fields of accounting, certificates of public convenience and necessity covering extensions and abandonments of facilities for interstate sales of natural gas for resale, and possibly some phases of natural gas production—there are potentialities of duplication, if not conflict, which should be minimized if confusion and damage to the public interest are not to result.

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[1] The Federal Power Commission's jurisdiction over interstate electric and natural gas rates extends only to sales for resale, *i.e.*, wholesale rates as distinguished from direct sales to ultimate consumers.

[2] The Federal Power Commission may not require an involuntary increase of natural gas rates.

[3] In the case of the Federal Power Commission, the suspension period is limited to five months; and proposed increases of rates on natural gas sold for resale for industrial use only may not be suspended.

[4] These powers are conferred upon the Interstate Commerce Commission and certain state commissions, but are not delegated to the Federal Power Commission in its regulation of interstate wholesale electric and natural gas rates.

[5] *Smyth* v. *Ames*, 169 U.S. 466 (1898).

[6] The leading case is perhaps that of *Bluefield Water Works & Improvement Co.* v. *Public Service Commission* (W. Va.), 262 U.S. 679 (1923).

[7] *Federal Power Commission* v. *Hope Natural Gas Co.*, 320 U.S. 591 (1944).

This chapter on Public Utility Regulation was prepared by Commissioner Nelson Lee Smith, Federal Power Commission

Thirty Years of Industrial Gas in New England

by A. J. Huston
Industrial Sales Engineer
Worcester Gas Light Company

THE changes in industrial gas engineering during the last thirty years have been considerable. They have been very gradual; in most cases for the better.

In the beginning we had few tools to work with; we had basic knowledge to a lesser degree than today. We used whatever basic information we had and the balance was just plain common sense.

We had competition from electric and oil, more so than today. We had six cent light oil compared to the present twelve cent oil, with a gas rate somewhat higher than now. The electric furnace manufacturer made modern, up-to-date equipment, while gas furnace manufacturers trailed behind. Electric furnaces had a pleasing external design. We had cases where the electric furnace operated for less, with a rate differential about the same as it is today, primarily because of superior design. However, the initial cost of an electric furnace was about three times that of a similar gas furnace. Many customers were convinced that gas furnaces would not control temperatures as well as electric furnaces. This was true as most gas furnaces, then, had only indicated temperature readings with manual control. The electric furnaces all had full automatic control of temperature.

Today this has all been changed. In recent years, the gas furnace industry has grown up. Its furnaces will be just as pleasing to the eye as the electric and probably operate from two to three times cheaper, depending on the rates, and perform just as well, if not better.

A young industrial gas engineer will be handicapped only by lack of experience. This is assuming, of course, that he is not lacking in salesmanship.

What are the requirements of an industrial sales engineer? First, he must have engineering training not only of gas, but other fuels as well. He must have an understanding of industrial heat processes. He must be able to discuss, intelligently, problems related to different types of industries. That means he must have a wide experience in the industrial field and be prepared to give a detailed analysis of the problem at hand. He should have a creative mind for developing new and better ways of applying gas to different processes. He should be a good salesman.

Industrial gas is not sold on first calls. It takes patience and many calls to gain the confidence and friendship of customers. Never call on a customer unless there is something to offer, such as a new type of furnace or other uses of gas that could be applied to some of his processes.

The future of the industrial gas business looks very bright, but we can take nothing for granted. Our competitors have not been idle, nor will they be.

Many industrial jobs being done today with gas can be attributed to good selling. Very few, if any, of our jobs today are sold on a straight Btu basis. We have to look at the overall cost. To do this, we must dig down to get all the facts that make up the final cost.

As a result of some selling and order taking, here is the record of industrial gas sales in Worcester from 1924 to 1951—27 years of progress.

Year	Monthly industrial load (MMcf)
1924	Practically none
1929	27
1933	16
1940	20
1945	105
1951	127

The 1951 record represents approximately 35 per cent of total send-out.

At the end of the war, in 1945, it was our opinion that the industrial gas load would drop off due to reduced production in industry. Instead, it has increased steadily. The reason is quite clear. During the war years large quantities of oil was replaced by gas. Gas worked out so well on these jobs that the customers never went back to oil. Also, more jobs in these same plants have been changed to gas. Industrial gas sales was given quite a boost due, to a large extent, to the war and there is no reason why they should not continue to increase.

Industrial gas service cost to a gas company is far less per dollar revenue than any of the other sales departments. Industrial gas service cost is approximately one-half a cent per Mcf of gas metered. The cost of the combined domestic, house heating and commercial gas service is approximately ten cents per Mcf of gas metered.

The wide difference in cost can be partly attributed to self-service by the larger companies and our policy has been to encourage this procedure.

The coming of natural gas has in many instances, upset our customer relations due to higher bills and poor conversions. These conditions *must* be corrected, lest we further jeopardize our good will.

Adapted from a presentation to New England Gas Association

BIGGEST CONVERSION JOB COMPLETED ON SCHEDULE

Late last month, the largest conversion to natural gas was completed when the crews of The Brooklyn Union Gas Company laid down their drills and wrenches after working on 2,000,000 gas appliances of all kinds. The extensive character of this huge conversion job required considerable advance planning and the thoroughness of that planning was demonstrated by the completion of the job on the day that was originally scheduled.

Part of an ad in which Brooklyn Union expressed appreciation to customers for cooperation during conversion.

Throughout the progress of the work, Brooklyn Union maintained close contact with its customers and kept them fully advised of what they were doing, where they were doing it, why they were doing it, and what cooperation was expected of the customers.

In the course of that work, 950,000 homes, stores and factories were visited and converted. 2,300 miles of gas mains were emptied of manufactured gas and filled with natural gas. The company answered 1,000,000 telephone calls about the conversion.

This TV commentator is explaining the Brooklyn conversion, noting districts scheduled for work.

Photos Brooklyn Union Gas News

News of the Gas Industry

AGA COMMITTEE STUDYING SMALL COMPANIES' PROBLEMS

The executive board of American Gas Association has authorized the appointment of a committee on special problems of smaller gas companies, to review various association activities, make recommendations for changes which would benefit smaller companies and to represent the interests of the smaller companies, at AGA.

W. Lee Woodward, president, Zenith Gas Company, Inc., Alva, Oklahoma, is chairman of this committee. Others on the committee include: R. E. Crawford, president, Minnesota Valley Natural Gas Co.; F. P. Dicus, president, Nebraska Natural Gas Co.; C. J. Dodds, vice president, Kansas Public Service Co., Inc.; David H. Frazier, Jr., president, Battle Creek Gas Co.; Edward M. Hahn, president, Kokomo Gas & Fuel Company; and Hansell Hillyer, president, South Atlantic Gas Company.

Training schools for service men, sales and promotion, insurance and public relations are subjects to be considered from the viewpoint of the smaller company. Also, other problems include rate forms, labor problems and wage rates, and representation on AGA committees.

GAMA Sponsoring Information Lounge

The industrial gas equipment division of Gas Appliance Manufacturers Association will sponsor an information lounge and a number of manufacturers of commercial gas equipment will exhibit at the biennial exposition of the gas industry in Atlantic City, late next month.

Industrial-Commercial Officers Slated

The nominating committee of the industrial and commercial gas section has selected the men to serve as officers in 1953. The nominees, who will be voted on in the section's meeting, October 28, during the AGA convention in Atlantic City are: chairman, Terry Hart, general sales manager, Nashville Gas Co.; vice chairman, Charles C. Eeles, district industrial sales manager, The Ohio Fuel Gas Co.

Industrial Gas Breakfast in Phila

The annual industrial gas breakfast will be held at the Penn Sheraton Hotel in Philadelphia on Wednesday, October 22, during the week of the National Metal Exposition. Meetings of the metals and industrial processing committees are planned following the breakfast. The exposition will be held at Convention Hall and Commercial Museum in Philadelphia, where AGA will sponsor the usual exhibit of industrial gas equipment.

Program Arranged for Convention

An array of speakers and subjects has been assembled for the thirty-fourth annual convention of American Gas Association and exhibition sponsored by Gas Appliance Manufacturers Association, at Atlantic City, October 27-30, reports F. A. Lydecker, vice president, Public Service Electric and Gas Company, and chairman of the AGA general convention committee.

Nearly 5,000 persons have made advance reservations and it is believed that this year's attendance will establish a new record. Four hotels are now filled and cannot make further reservations.

Plans for the exhibit staged by GAMA are moving along to successful completion, according to Harold Massey, assistant managing director. The expanded exhibit space of 75,000 square feet has been completely sold.

There will be eight complete New Freedom gas kitchen displays, Mr. Massey says.

As a new feature, the exposition will be open to delegates and guests on Tuesday evening, October 28, from 8:00 p.m. to midnight. Dealers are welcome at the exposition every day.

A special entertainment program sponsored by GAMA for members of the convention and dealers will be presented on Thursday evening, October 30.

Because of the growing importance of natural gas in all segments of the gas utility industry, separate meetings of the manufactured gas and natural gas departments of AGA will be replaced by a joint meeting in the Auditorium Ballroom, at 10 A.M., Monday, to open the convention.

The first general session will be held Monday afternoon in the Ballroom.

INGAA to Cover Natural Gas Interests

The annual meeting of Independent Natural Gas Association of America to be held in Omaha on October 6 will include on its program a panel discussion of natural gas which is projected to cover all segments of the industry.

Under moderation of C. P. Rather, president, Southern Natural Gas Co., the specific subjects to be presented for discussion are:

The distributing company viewpoint, by N. Bernard Gussett, president, Iowa Power & Light Co.

The state regulation of natural gas as exemplified by California, by Commissioner Harold P. Huls of the Public Utilities Commission of California.

The problems of the producers, by Russell B. Brown, general counsel, Independent Petroleum Association of America.

The viewpoint of the pipelines, by J. J. Hedrick, president, Natural Gas Pipeline Company of America.

The problems of the royalty owners, by Bryan W. Payne, president, Texas Independent Producers and Royalty Owners Association, and A. E. Kramer, secretary, Southwest Kansas Royalty Owners Association.

With the conclusion of the presentations, Paul Kayser, president, El Paso Natural Gas Co., and president, INGAA, will present an industry discussion designed to point to the solutions of the problems that have been raised during the panel discussions.

Lundstrum is Ohio Fuel Gas President

Advancement of Allan W. Lundstrum to the presidency of The Ohio Fuel Gas Company has been announced by Earl C. Overbeck, chairman of the board of directors. Mr. Lundstrum was vice president and general manager.

A. W. Lundstrum

Succeeding Mr. Lundstrum, Mr. Overbeck said, is Everett D. Bivens, former treasurer of Ohio Fuel and, since 1951, the vice president and general manager of the United Fuel Gas Company of Charleston, W. Va., and its six affiliated companies.

The changes were made necessary by the death of William N. Grinstead, president of Ohio Fuel, on Aug. 2.

Mr. Lundstrum was named vice president and general manager of Ohio Fuel on May 23, 1951. He came from the Stewart Warner Corporation, where he had been a consulting engineer since 1948.

Mr. Lundstrum was war-time deputy director of the Office of War Utilities.

From 1946 to 1948 he was president of the Heating Research Corporation, a subsidiary of Stone & Webster, Inc., New York, formed to manufacture Safaire gas heaters, which he invented.

In 1945-46 Mr. Lundstrum was director of research for United Gas Pipe Line Company, Shreveport, La. Before that he was a gas rate specialist and gas operating consultant with Ebasco Services, Inc., New York. From 1928 to 1930 he was an assistant engineer with the Columbia Gas System Service Corporation in Columbus.

Two RG&E Men in Sewer Rescue

Two employes of Rochester Gas and Electric Corporation were given awards by Alexander M. Beebe, president, in appreciation of their quick thinking and courageous efforts in a recent sewer gas disaster in Rochester, N. Y. The men, Raymond B. Luft and James DeJohn, tried desperately to save four men who were overcome by sewer gas in a manhole.

Two town employees, working in a sanitary sewer, were overcome by sewer gas. Two firemen, in gas masks not equipped with an oxygen supply, tried to rescue the workers and were overcome.

A call for help went to RG&E and Mr. Luft was rushed to the scene with an inhalator. Mr. DeJohn, working in the vicinity, picked up the call on his car radio went to the scene. Mr. Luft, wearing an oxygen mask, brought up three men before his supply of oxygen was exhausted. In the meantime, other masks had arrived and the fourth victim was brought out. Unfortunately, resuscitation efforts failed.

More Texas Gas to California

Preliminary estimates regarding the flow of the additional 150 MMcf of Texas natural gas to California, recently okayed by Federal Power Commission, indicate that the first gas will reach California on February 1, 1953. These estimates are based on recent conversations with PAD authorities, who are currently studying the steel situation.

Although the El Paso Natural Gas Co. will be able to provide 80 million cubic feet of additional Texas gas per day on February 1, only a fraction of that amount can be taken by the California facilities. It is expected the remaining 70 million cubic feet of Texas gas will reach California in May or June.

Contracts for Construction Up

Construction contracts awarded in the 37 states east of the Rockies in July were $1,511,285,000 or 2 per cent ahead of June and 10 per cent ahead of July 1951, according to F. W. Dodge Corporation, construction news and marketing specialists. The total for the first seven months of the year was $9,269,863,000 or 9 per cent behind 1951's comparable total of $10.1 billion.

July non-residential contracts were $562,686,000 or 2 per cent more than June and 5 per cent more than July last year. Non-residential for seven months was $3,261,661,000, down 29 per cent from the same period last year.

Residential awards for July were $608,078,000, a 5 per cent gain over June and 11 per cent more than July 1951. Residential for seven months was $3,952,115,000, up 2 per cent over 1951.

Public and private works and utilities at $340,521,000 in July were 4 per cent less than June but 15 per cent more than July a year ago. For seven months, public and private works and utilities at $2,056,087,000 were 20 per cent ahead of the corresponding period 1951.

Servel Gets New Airwing Contract

A second multi-million-dollar contract for F-84 Thunderjet fighter-bomber wings has been awarded Servel, Inc., by Republic Aviation Corporation. At the same time, Air Force Undersecretary Roswell L. Gilpatric, announced that Servel is now the largest producer of military airplane wings in the world. Gilpatric also said that he expected the large-scale wing production program at Servel would extend through 1955.

The Thunderjet wings are being turned out in a new plant completed last December in record-breaking time. W. Paul Jones, Servel president, said production has now reached 60 per cent of capacity, and that he expects the company to reach 100 per cent this fall.

Peoples-NYS Natural Move Offices

Headquarters offices of The Peoples Natural Gas Co. and New York State Natural Gas Corp., in Pittsburgh, were moved to the new Gateway Center, 140 Stanwix St., last month.

The moving period for Peoples and New York State Natural involved about 500 persons and 270 tons of office equipment.

The former Peoples building at William Penn Place will be razed to make way for a $4,000,000 park in this area of downtown Pittsburgh.

Haley Retires from Niagara-Mohawk

John L. Haley, a director and vice president of Niagara Mohawk Power Corporation, retired from active service with the company on September 1. Mr. Haley will continue as a member of the corporation's board of directors.

Gustav F. Watters, a director and vice president, in addition to his present system wide responsibilities as an executive staff officer, has assumed the administrative functions of Mr. Haley.

Servel Employment Near High

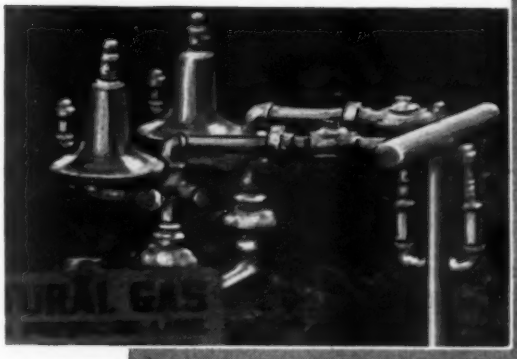
Employment at Servel, Inc. has doubled since December, 1951, and now is only a few hundred short of the World War II peak of 10,600.

The number of employees now totals 10,009 and the company continues hiring for both civilian and defense work.

Company officials said production is about equally divided between defense and civilian work.

→

A WIDER RANGE
... of Delivery Pressure Control



REYNOLDS HIGH PRESSURE LINE REGULATORS in parallel hookup have an increased range of capacity as well as a wider range of delivery pressure control. This also provides greater margin for emergencies. On inlet pressure the range is up to 650 pounds. For outlet pressure, this unit assures absolutely accurate and dependable control from 2 to 100 pounds. This variance in outlet pressure is made by use of different sizes of diaphram cases and further flexibility in the spring type is possible by use of different strength springs.

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GAS CONTROL SINCE 1892

E. L. Hall, AGA, to Get Award

For his contributions to the gas industry, Edwin Loy Hall, director of the testing laboratories of American Gas Association, Cleveland, will be awarded a Walton Clark medal by The Franklin Institute of the State of Pennsylvania, at the Institute's Medal Day ceremonies in Franklin Hall, October 15.

The citation accompanying the medal states that it was awarded "in consideration of his [Mr. Hall's] many contributions to the gas industry, in the improvement of old processes for gas manufacture, for the development of new processes for the production of valuable by-products by the pyrolysis of petroleum oils, and for the invention of a new and more efficient process for the production of high heating value gas as a substitute for natural gas."

Much of Mr. Hall's research work has dealt with the gasification of oil and other hydrocarbons, with improvements in the pyrolysis of petroleum oils for the production of valuable hydrocarbon by-products, and with cracking of petroleum oils in the presence of steam and the re-cycling of benzol homologs to increase the yield of resin from hydrocarbons.

His most recent and more important work has been the development of a process for the production of high Btu gas to be used for city gas supply and as a supplement or a substitute for natural gas.

Baltimore Uses Electro-Leak Alarm

An ultra-sensitive electro-mechanical nose is being used by Consolidated Gas Electric Light and Power Company of Baltimore to warn of any gas leakage in the 5 MMcf waterless gas holder at the company's North Point station, near Baltimore. The combustible gas alarm system, developed by Mine Safety Appliances Company, is the principle of the alarm system. Year-'round air sampling through six strategically located intakes, at the upper portion of the holder, is analyzed automatically and the presence of gas is indicated on a central panel within the control station. Signals on the panel correspond with each of the six air sampling intakes on the holder.

If the concentration of gas in a sample reaches a predetermined percentage of the lower explosive limit, an indicator needle moves to the danger area, a light flashes and an audible alarm is sounded so that station operators have the three indications on which to depend for leakage information and the need for immediate action.

The Baltimore holder is approximately 300 feet high and 200 feet in diameter.

A Little Yarn About A Bird

For those who have any reservation about the versatility of gas, we hope that we shall dispel those doubts with a yarn about a gas refrigerator that was placed into service—with notable success—as a hatcher of pheasant eggs.

As we understand it from Southern California Gas Company, one of the customers found that her pair of pheasants were too busy to hatch some new eggs. She placed eight eggs in a dessert tray and set the tray on top of the Servel louvres. Then, with a ventilated box over the tray, she regulated the temperature to 103°F by moving the tray forward or backward and turning the eggs at frequent intervals. After twenty-eight days (!) of that sort of thing, two eggs hatched. One bird survived, and the people at SoCal say it is carrying on, thanks to a versatile gas refrigerator.

Northern Natural Buys Permian Stock

Northern Natural Gas Company has purchased 51 per cent of the Permian Basin Pipeline Company in a transaction that includes stock and the option to buy Permian's entire gas delivery when it is available.

Federal Power Commission now has an application on file in which Permian proposes to build a 384-mile pipeline from the Permian Basin area of west Texas and eastern New Mexico to connect with Northern Natural's system. The proposed line would be made up of 26" and 30" pipe with four compressor stations and the initial capacities of 200 MMcf, to be increased to 300 MMcf. The estimated cost of the project is $60,000,000.

Permian's reserves are said to be in excess of 2.2 trillion cubic feet and, in addition, the company has a contract with Phillips Petroleum Company to purchase 200 MMcf of residue gas per day from gasoline plants in west Texas.

If the plans for the Permian line and the additional facilities to be built by Northern Natural are approved by FPC, it is anticipated that Permian should start delivering gas to Northern Natural in late 1953.

Four Northern Natural officers have been elected to Permian Basin Pipeline Company. They are John Merriam, president, and Larry Shomaker, A. B. Dilworth and John Hanley, vice presidents. The business offices of the Permian company have been transferred from Chicago to Northern Natural's office building in Omaha.

Publication is Ten Years Old

Panhandle Lines, the publication that is edited for the employees of Panhandle Eastern Pipe Line Company, reached its tenth year of activity with the August issue. From one publication to another, the editors of AMERICAN GAS JOURNAL say, "Cheers!" to the editor and reporters of *Panhandle Lines.*

Borrowed Funds Expected to Cost More

(Continued from page 20)

chiefly the experience of less than ten per cent of all the listed issues. It also means that the more advantageous financing terms will be available to the stronger-situated industries and companies, such as gas companies and other utilities. But to insure this will require more vigorous prosecution of rate increase applications and a quicker realization of the need for rate relief by the regulatory agencies, such as a few of the state commissions recently have been evidencing.

Paring by the Federal Power Commission of the rate of return on natural gas company stocks, however, plus the lag between rising gas supply costs and compensatory rate relief to the transportation and distribution companies, may make it more difficult for the companies concerned to finance on as favorable a basis as other utilities somewhat more fortunately situated.

Lending officials of leading insurance companies incline to the belief that a pipe line company with a debt ratio of 70 to 75 per cent will have to pay 4⅛ per cent or 4¼ per cent for first mortgage bond money and at least 5½ per cent for preferred stock money. They state that they are frankly worried about the recent Federal Power Commission decision on Northern Natural Gas Company in which the Commission allowed what the Company paid for bonds and preferred stock plus 8¼ per cent on the common stock to allow an over all rate of return of 5½ per cent.

From the standpoint of market conditions themselves, conditions could not be more propitious for new financing. Investment underwriting firms at this writing have no inventories whatever of unsold recent corporate offerings. While financing is expected to be heavy during the Fall and early Winter months, at least, the jam may be a bit slow in developing.

Safe Practices in Distribution of Natural Gas

(Continued from page 17)

odorant often helps to determine location of leakage.

There is high value in having programs of meetings of all operating personnel, where safe operating practices, new construction methods, and other subjects of interest to employees may be discussed and thoroughly understood.

Customers or consumers form their opinion of the gas company serving them by their observation and appraisal of those employees they meet most often, usually the meter readers or appliance service men. If these men are well informed on the various phases of company work they can often create very favorable impressions of the company.

Our company has been utilizing these methods in our districts for some time and have found them very helpful. Our accident severity rate was reduced to .03 in comparison with a national average for years 1948 to 1950 for the gas industry of .96 and our frequency rate was reduced to 1.26 with a national average of 16.1 for the gas industry for years 1948-1950.

It is quite obvious that no company can successfully carry out any program to instill confidence in consumers' minds that we are safely marketing our product unless our own employees are indoctrinated with the idea and are at the same time safe and careful workmen.

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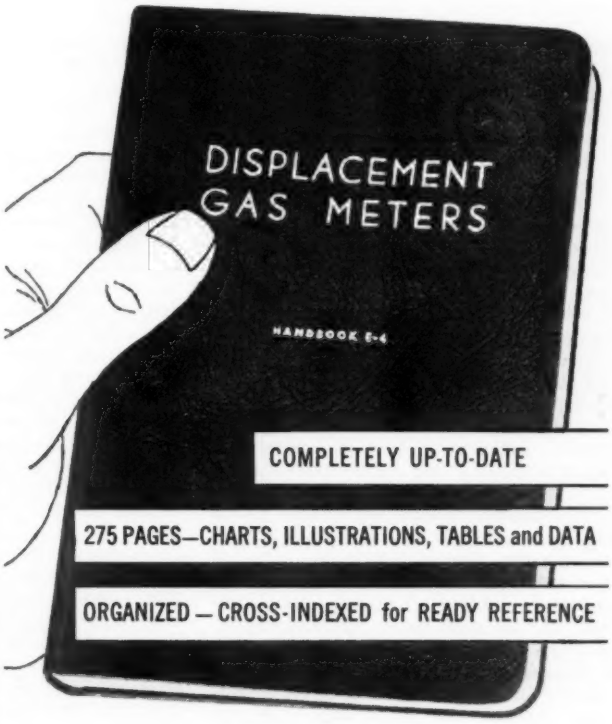

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INDEX

As a special service to the Gas Industry, the American Meter Company offers the most authoritative guide ever published on operation, tests, maintenance and repair of Ironcase and Tinned Steelcase Meters—The New E-4 Handbook of Displacement Gas Meters, edited by John C. Diehl.

The new comprehensive manuals are available at the special pre-publication price of $3.00 per copy until November 1. After this date, limited reprinting will necessitate a price of $4.50 per copy.

For your copy, write Publication Department, American Meter Company, 920 Payne Ave., Erie, Pa.

AMERICAN METER COMPANY

INCORPORATED (ESTABLISHED 1836)

Columbia Report Emphasizes Rate Lag

The lag between the date when higher costs became effective and the granting of higher rates by overburdened public utility regulatory commissions is the feature of a report sent to stockholders of Columbia Gas System.

The earnings in which stockholders are entitled to share must absorb the higher costs during this lag period, the report said.

"The various public utility commissions have a great responsibility to the public and to the investors in public utility securities," a letter, signed by Stuart M. Crocker, chairman, and George S. Young, president, said.

"In frequent conferences with the regulatory commissions having jurisdiction over Columbia Gas System companies, we have pointed out the absolute necessity for prompt action on our applications in order to minimize the losses resulting from lag. Otherwise, there will be a period of great uncertainty as to our earnings."

For almost five inflationary years, the letter noted, the higher costs of production, purchased gas, payrolls and materials have been met by increased operating efficiencies and greater volume of sales.

"Now," Mr. Crocker and Mr. Young wrote, "the point has been reached where increasing volume and improved operating efficiencies will no longer absorb higher costs."

Columbia is asking for "gas price increases sufficient to keep the company's stock attractive," the report states. "Earnings should be sufficient (a) to support a stable dividend policy and (b) to give a margin of retained earnings to allow for a conservative appreciation in the value of our common stock." And last, earnings should be sufficient to provide some "cushion" for lag such as we are now experiencing.

"Under such a practice, our stock would remain attractive in a competitive investment market. We could also raise the money needed to build new facilities—the one means of providing the gas services needed by the people and industries in our territory. We believe this can be accomplished if the traditional American sense of fair play prevails among us in Columbia, the regulatory commissions, and our consumers," the report concluded.

While the gross revenues of the Columbia System reached a new high of $194,900,000 for the twelve months ended June 30, 1952, the net income of the utility dropped to 90 cents a share on the average number of shares outstanding, compared to $1.20 a share for the corresponding 1951 period.

In the quarterly report, stockholders were told that Columbia's deliveries of gas to industry "were reduced sharply in June and July because of the steel strike." The reduction built up gradually until the loss in sales reached approximately 100 million cubic feet a day.

The extent to which the company's 1952 construction program will be delayed by the steel strike has not yet been evaluated.

Titan Valve Adds California Rep

Chester S. Bigelow and Associates, 903 Fair Oaks Avenue, South Pasadena, Cal., have been appointed exclusive California representatives by Titan Valve and Manufacturing Co., Cleveland.

1.25 MMMCF DAILY CAPACITY IN FPC AUTHORIZATIONS

Natural gas pipeline facilities which will add more than 1.25 MMMcf to the daily delivery capacity of the nation's gas transmission systems were authorized by Federal Power Commission during the first six months of this year.

The new authorized facilities include 1,915 miles of pipeline. The combined cost of all the facilities is estimated at $235,500,000. Projects estimated to cost more than $700,000 each, accounted for approximately $179,730,000 of the total construction cost.

These major projects are expected to benefit 101 cities with populations of more than 50,000, in twenty-five states and the District of Columbia. Numerous other smaller communities will be included in the programs.

The largest single FPC authorization during the six months' period was for Tennessee Gas Transmission Company to construct 591 miles of parallel loop lines along its existing system and a 304-mile transmission line from Mercer, Pa., to Utica, N. Y. These projects also include 163,000 compressor station horsepower and the total cost is estimated at more than $128,000,000.

When completed, the construction will enable Tennessee to increase its delivery capacity by 205 MMcf daily to provide additional gas service to existing customers, particularly in New York and New England. These facilities will also be used in connection with the underground storage project being developed in Pennsylvania, jointly by Tennessee and United Natural Gas Company.

The latest summary of authorizations by FPC raises the total since February 7, 1942, when the Natural Gas Act became effective, to 45,800 miles of pipeline and 3,300,000 horsepower compressor units—at a total estimated cost of more than $3,000,000,000. The facilities authorized since 1942 were designed to carry more than 17 MMMcf daily.

New Firm of Leakage Experts

A new corporation, Heath Survey Consultants, Inc., has been formed for the purpose of specializing in gas utility leakage survey programs. While the officers and personnel of the new corporation will be the same as for Heath Tree Service, Inc., it will offer improved methods of operation in leakage surveys and will enlarge the research and development work that aims to provide maximum leakage protection. The service will include vegetation and soil leak location surveys, complete business area leakage inspection, winter leakage surveys and soil resistance surveys.

The principal office of Heath Survey Consultants, Inc., is in Wellesley, Mass.

Merriam Is Canadian Corp Director

John Merriam, president, Northern Natural Gas Co., was elected to the board of directors of Calgary and Edmonton Corporation, Ltd., of Winnipeg, a large holder of natural gas, oil and other mineral rights in the Province of Alberta. Mr. Merriam is the only citizen of the United States on the board; other members are from Canada and England.

NEW BOOKS

DIE GASVERSORGUNG (The Gas Industry).

This new German handbook on the gas industry, to which experts have contributed, deals with gas production, distribution, utilization and chemical control.

The volume provides a survey of theoretical and practical aspects of the gas industry and presents its historical developments.

A large part of the book is on production, with raw materials, carbonization, gasification, purification, meters, compressors, holders, process control, corrosion, by-products and standards.

The section on supply includes chapters on low, medium and high pressure gas distribution, governors, mains, services and customers' installations.

The section on gas utilization explores the possibilities for gas in the domestic, commercial, and industrial fields.

There is a chapter on solid, liquid and gaseous fuels.

Pp. 628 + xii. 196 illustrations, 146 tables. Vulkan-Verlag, Dr. W. Classen, Essen, Germany. Price 56 DM.

GEOLOGY. By O. D. von Engeln and Kenneth E. Caster.

This volume presents geology in a manner which truly invites reading by those who wish to have a sound basic recognition of the structure and materials of the earth. While it is clearly adaptable as a textbook, the level of general interest which is maintained throughout is notable. The reader is lead gradually from the known to the unknown and the authors leave nothing to anticipation. The chapter and topic successions are logical, and the continuity is maintained in a narrative vein. The book begins with a discussion of the geologic phenomena of soils and rocks. Specific topics, such as the interior and origin of the earth, are treated at the end of the book. Each historical geology period is made distinctive, provided with an identity, and shown to have had particular characteristics. The authors avoid the monotony of conventional discussion. In the presentation of paleontology the authors are aided by a completely new series of paleogeographic maps of North America for all periods.

In its basic form, the book is divided in four parts: introduction, the natural history of igneous rocks, structure-process-forms, and geologic history divided into the four principal eras.

Pp. 730 + xii. Illustrated with photographs, maps, diagrams and drawings. McGraw-Hill Book Co., 330 W. 42nd St., New York 36.

DISPLACEMENT GAS METERS—Operating, Testing and Repairing.

This authoritative handbook, containing many results from original research on displacement meters, was designed to make available a comprehensive treatment of the methods for operating, testing and repairing the equipment.

The book includes data related to all sizes of positive displacement meters, other related data round out the usefulness of the book. The publication is a collaboration of gas measurement engineers throughout the country and engineers and executives of American Meter Company.

Fifteen sections in the book divide the subjects of gas meters appropriately and in apparently logical order.

The book is fully illustrated and includes a number of tables and formulas. Particularly noteworthy are the sequence photographs which form step-by-step instructions, in graphic form, related to the text.

Pp. 275. Publication Department, American Meter Co., Erie, Pa. Published price, $4.50.

GAS FACTS, 1951. By the Bureau of Statistics, American Gas Association.

The latest edition of this statistical analysis of the gas industry has been enlarged to include new data. In view of its position as the source of overall gas utility data, the latest edition will be useful to those who are concerned with overall industry information. A new table gives the number of utility customers using gas for househeating on an annual basis since 1949 and forecasts the number of additional users for each of the next three years. Also added are statistics relating to the consumption of LP gas and the data on the use of steel and other materials, from 1949 to 1951.

Pp. 261 + xiii. American Gas Association, Bureau of Statistics, 420 Lexington Ave., New York 17.

Harry F. Mitchell

Harry F. Mitchell, 67, treasurer of Union Gas System, Inc., died at St. Luke's in Kansas City, Kans., September 1. Mr. Mitchell had entered the hospital a week before; post surgical complications caused his death.

He had been an officer and director of Union Gas System for more than thirty years and was one of the oldest employees in point of service.

Mr. Mitchell was born April 22, 1885, at Franklin, Pa. He attended schools in Pleasantville, Pa. In 1916 he went to Independence, Kan., and went to work for a predecessor of Union Gas System.

PCGA Elects New Officers

James S. Moulton, vice president and executive engineer, Pacific Gas and Electric Company, San Francisco, was elected president of Pacific Coast Gas Association at its annual convention. Mr. Moulton succeeds W. M. Jacobs, vice president, Southern California Gas Company.

Elected vice president was W. C. Mainwaring, vice president, British Columbia Electric Company, Vancouver. Harry McGann, auditor of division accounts, Pacific Gas and Electric Company, was re-elected treasurer.

One new director was elected, A. R. Bailey, Coast Counties Gas and Electric Company, San Francisco. Directors re-elected were W. J. Bailey, Jr., Affiliated Gas Equipment, Inc., Monrovia; C. H. Gueffroy, Portland Gas and Coke Company, Portland, Oregon; F. B. Wright, Southern Counties Gas Company, Los Angeles and R. T. Richards, Arizona Public Service Company, Phoenix.

AGA Organizes Secretaries Committee

The executive board of American Gas Association has authorized the appointment of a corporate secretaries committee with Dale Parker, secretary, The Columbia Gas System, Inc., as chairman. The new committee will promote meetings and activities devoted to matters of specialized interest to the corporate secretaries of gas companies.

CRUSE-KEMPER COMPANY

AMBLER, PENNA.

FORTY-NINE YEARS OF SOUND

STEEL PLATE CONSTRUCTION

GAS HOLDERS

Gas Holder Repairs

PURIFIERS

Gas Holder Inspection

NEW BULLETINS

(Continued from page 32)

SMALL VOLUME HIGH PRESSURE REGULATORS. This bulletin describes a line of regulators for controlling air, gas and liquids at high pressure and low volume. Included are illustrations prepared with admirable clarity for understanding of the construction and operation of the equipment, together with size, ratings and applications. Complete specifications and charts are provided for selecting regulators.

Bulletin 125-C. 16 pp. Grove Regulator Co., Emeryville, Cal.

FABRICATED FITTINGS. This bulletin describes, illustrates and specifies a line of fabricated fittings: elbows, tees, reducers, laterals, wyes, crosses, bends, manifolds, hoods, branches and transitions. The standard line of fittings is made of carbon steel, 10 gauge. Also available are 3/16" and ¼". The manufacturer states that other fabrications can be made from required metals.

Bulletin 525. 4 pp. Naylor Pipe Co., 1230 E. 92nd St., Chicago 19.

TRUCK-MOUNTED BACK HOE. Of interest to utilities, this bulletin describes a ⅜ cubic yard, five-ton back hoe that is said to dig 100 feet of 5-foot trench per hour and can excavate to depths of 14 feet. The hoe and eight optional attachments are fully described and illustrated with specifications.

Bulletin TT-101. 4 pp. Schield Bantam Co., Waverly, Ia.

THE LINDE-FRAENKL PROCESS OF OXYGEN PRODUCTION. This new bulletin describes, in complete detail, the units that are available for low-cost tonnage oxygen production. The cost of operation and features of the process are given together with industrial uses. The physical properties of oxygen and nitrogen are shown. Included in a long list of applications are fuel and synthesis gas.

Bulletin 2402. 24 pp. Chemical Plants Division, Blaw-Knox Construction Co., P. O. Box 778, Pittsburgh 30.

SPEEDOMAX INSTRUMENTS. The line of instruments described in this new catalog are intended for measurement and control of process variables. Gas industry applications include precise industrial work where time and temperature are important factors.

Catalog ND46(1). 52 pp. Leeds & Northrup Co., Philadelphia 44, Pa.

MEN AT WORK

HARRY L. BROCIOUS is the new manager at Uniontown, Pa., *Manufacturers Light and Heat Company*.

ROBERT D. BRUNET was appointed assistant to the president, Charleston group, *Columbia Gas System*.

JOHN DEADERICK has been advanced to manager, Philadelphia office, *The Foxboro Company*.

GEORGE L. DIRKS is now general manager, Blaw-Knox division, *Blaw-Knox Co.*

W. P. FRISCO is now factory manager, *Vulcan Rubber Products Company*.

A. J. GATES is now southwestern representative, *Pipe Linings, Inc.*

LLOYD L. GRACE, St. Peter, Minn., now represents *Sprague Meter Company* in Minnesota, Wisconsin, North and South Dakota.

LAWRENCE P. HEAD has been appointed sales engineer, St. Louis regional office, *Cooper-Bessemer Company*.

GEORGE E. JENNINGS is now West Coast district manager, *Davey Compressor Co.*

JAMES H. MARKS has been appointed general superintendent of distribution, *Equitable Gas Co.*, Pittsburgh.

THEODORE C. MORAN has been advanced to general superintendent, gas operations, *Niagara Mohawk Power Corp.*

GLENN E. NIELSON, president, Husky Oil Co., was elected to the board of directors, *Northern Natural Gas Co.*

RAY A. NEWBOLD is now assistant employee relations director, Pittsburgh group, *Columbia Gas System*.

ELTON STUENCKEL is now advertising manager, *South Jersey Gas Company*.

INDUSTRIAL AND COMMERCIAL GAS SHOWS

Two national expositions and two traditional breakfasts are on the program of the industrial and commercial gas section, American Gas Association, in the immediate future.

The section will sponsor combined exhibits in two of the largest national shows. First will be the National Metal Congress and Exposition during the week of October 20 in the Commercial Museum, Philadelphia Public Auditorium. Here AGA will have as cooperating exhibitors: American Gas Furnace Co.; Continental Industrial Engineers, Inc.; Eclipse Fuel Engineering Co.; Gas Appliance Service, Inc.; Gehnrich & Gehnrich, Inc.; Charles A. Hones, Inc.; The C. M. Kemp Mfg. Co.; Morrison Industries, Inc.; Selas Corporation of America and The Spencer Turbine Co. This group will make up the largest single exhibit of the Metal Show.

Industrial gas men attending this exposition of the metals and metalworking field also will be able to attend the sixteenth annual industrial gas breakfast, Wednesday morning, October 22, at the Penn-Sheraton Hotel. George F. Sullivan, managing editor of *The Iron Age*, will be the guest speaker.

Meetings of industrial gas committees will be held immediately after the breakfast.

The National Hotel Exposition in Grand Central Palace, New York, will be held during the week of November 10. AGA will sponsor the largest single exhibit of the show, with these manufacturers of heavy-duty gas cooking equipment cooperating:

Anetsberger Brothers, Inc.; The G. S. Blodgett Co., Inc.; The Cleveland Range Co.; Detroit-Michigan Stove Co.; Duke Manufacturing Co.; Gas Consumers Service; Groen Mfg. Co.; Kewanee Industrial Washer Corp.; Magic Chef, Inc.; J. C. Pitman & Sons, Inc.; Robertshaw-Fulton Controls Co.; Savory Equipment, Inc.; A. O. Smith Corp.; Vulcan-Hart Mfg. Co.

Following precedent, the fifth annual commercial gas breakfast will be held in the Small Ballroom of the Hotel Roosevelt, Thursday morning, November 13.

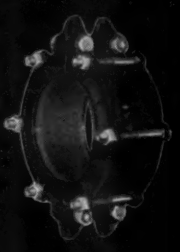
Following the breakfast, commercial committees will meet.

FOR REPAIRING BELL AND SPIGOT JOINT LEAKS...

SKINNER-SEAL
Bell Joint Clamp for stopping bell and spigot joint leaks under pressure. Gasket is completely sealed: at bell face by Monel Metal Seal band—at spigot by hard vulcanized gasket tip.

AND BROKEN MAINS

SKINNER-SEAL
Split Coupling Clamp. One man can install in 5 to 15 minutes. Gasket sealed by Monel band. Tested to 800 lbs. line pressure. A lasting repair. 2" to 16" incl.



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SOUTH BEND 21, INDIANA, U.S.A.

GOODMAN
USED SINCE 1897
2" HANDLE & LOCKING SLEEVE
GAS MAIN STOPPER

The Reliable Shut-Off for Street Mains

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

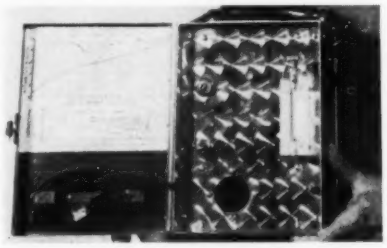
Nearly a half century of service to the Gas Industry.

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

NEW EQUIPMENT

Odor-intensity meter

This recently developed odor-intensity meter, now in production for distribution to gas utility engineers, simulates a room test

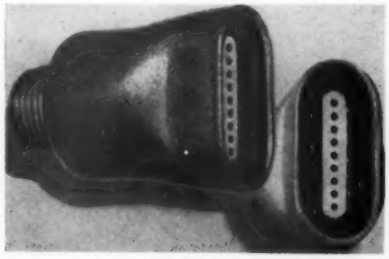


for determining the threshold detection, odor strength and odor characteristics of natural and LP gas. The unit is housed in an aluminum case, and all parts which come in contact with gas are of aluminum or glass. The unit includes a 110-volt constant-speed electric motor driving a small turbine blower to deliver a constant volume of air into which odorized gas samples are measured through a rotameter. The air-gas sample is mixed in a tapered glass tube. Sniff tests at the top of the gas permit personal judgment of the characteristics and intensities of the odorized gas. A calibration chart provides the means for determining the necessary increase in odorant. The average range of the instrument is from less than 1/10 of 1 per cent to more than 1 per cent, the standard of measurement generally used for room testing of odorized gas. This meter may be used at any point on a distribution line. The instrument measures 6″ x 6″ x 8½″ and weighs 5½ pounds.

Oronite Odorometer. Oronite Chemical Co., 38 Sansome St., San Francisco.

Gas burners

Designed especially for use with natural and other slow-burning gases, a new series of burners is said to facilitate converting burner manifolds for the use of those gases. With a range of capacities from 1,500 to 5,000 Btu per hour, these burners are adaptable in the replacement of manufactured gas burners in hand torches, ribbon burners and sealing burners. The characteristic flame from these burners is hatchet-shaped and provides intense local heat. The manufacturer illustrates their adaptability in glass work and metal



work. The burners are made of brass and are fluted to give maximum uniformity of flame in natural gas service. Pilot holes burn the air-gas mixture at a low velocity to support and retain the flame from the main burner holes. Flame lengths range from 2″ to 2½″, in accordance with the burner capacities. Burners made of heat resisting metal can be supplied for use with oxygen and gas.

Fishtail Burners. Research Vacuum Supply Co., 3434 Montrose Ave., Chicago 18.

Portable pipe cutter

A new portable pipe cutter has been designed to cut and bevel steel pipe on the job. Also, this equipment will cut cast iron pipe without splits or breaks, the manufacturer states. The equipment is light weight and provides flexible features for using it on pipe already installed. Claims are made for true cuts with flat edges on the inner circumference, ready for welding. Two models cover the range of pipe from 6″ to 16″. The smaller model weighs approximately 60 pounds. It can be slipped under pipe already in the ground. Power can be taken from a ¾″ slow-speed electric drill, the equivalent in an air drill or a flexible shaft on a gasoline motor geared to slow speed. Adaptability to gas construction and maintenance work is noted by the manufacturer. Another advantage claimed is that pipe already in a ditch can be cut exactly where wanted, with only 1/3 as much ditching as necessary to make the cut and replacement. The cutter is made with a cast aluminum housing. Ball bearings are sealed on eccentric fittings for

adjustment. The manufacturer claims the tool increases its depth of cut with every revolution and compensates for out-of-round pipe. It is held firmly in position on the pipe during the cutting. Replaceable cutter bits are of high-speed steel. Oiling of the cut is automatic.

SpringLoad pipe cutter. SpringLoad Manufacturing Corp., 2412 Aurora, Seattle 9, Wash.

Gas appliance tester

A new gas appliance tester is designed for use by service and repairmen in their testing of gas appliances using thermostats, thermocouples and relays. The instrument

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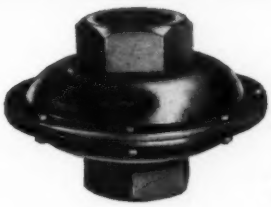

VERTICAL
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Eliminate Air
In Gas Lines With

NORWALK DIAPHRAGM TYPE CHECK VALVES

Vertical Type in Sizes ⅜″ thru 6″
Horizontal Type in Sizes ½″ thru 6″

Norwalk Diaphragm Type Check Valves, both Vertical and Horizontal, provide positive check against reverse flow of either gas or air. Rugged construction will stand back pressures to 50 lbs. Soft seat disc will seat freely when gas flows in desired direction or will seat tightly on equalised or back pressure. Valves for higher pressures supplied on special order.

NORWALK VALVE COMPANY
South Norwalk, Conn.

CLIFFORD E. PAIGE RETIRES FROM BROOKLYN UNION

Photo Brooklyn Union Gas News Clifford E. Paige

After forty-nine years in the gas industry, Clifford E. Paige, chairman of the board of directors, The Brooklyn Union Gas Company, retired from active participation in the day-to-day activities of the company. However, he retains contact as a member of the board, at the request of the other members.

Mr. Paige began his association with The Brooklyn Union Gas Company in 1924 when he joined the company as vice president. He was chief engineer from 1927 to 1939 and became president in 1935, which position he held until 1951. He has been a director since 1932 and chairman of the board since 1940.

A working career that started in 1901, with two years as a grocery boy working seventy-two hours a week for $3, Mr. Paige entered the gas industry in 1903 as an office boy for the Springfield (Mass.) Gas Light Company. Two years later he was named assistant superintendent. The year following he was made superintendent of the Malden and Melrose Gas Light Company, and in 1912 he became manager of that company. At the Worcester Gas Light Company in 1919, he was the manager, and in 1922 he became president of the Beverly Gas and Electric Company. At the same time he was named vice president of Charles H. Tenney and Co.

NEW EQUIPMENT

(Continued from page 35)

is used directly on the job. This new tester will determine and measure the thermovoltage produced by the thermocouple, with or without the load of the magnetic assembly. Also, it measures the millivolts required for proper functioning of magnetic assemblies. The built-in meter indicates the repair steps that are necessary. The manufacturer states that the instrument can be used for continuity tests of relays, thermostats, wiring, coil assemblies, solenoids and heater coils.

M-Scope Gas Appliance Tester, Model G-20. Fisher Research Laboratory, Inc., 1961 University Ave., Palo Alto, Cal.

Pipe tape

A new polyvinyl chloride pipe tape is now available in 1" widths and the manufacturer states that it is particularly adaptable for wrapping fittings. This tape has an insulation resistance of 100,000 megohms and a dielectric strength of 10,000 volts, 10 mil. This tape is said to offer protection against water, salt water, acids, alkalies, oil and soil chemicals.

Dressertape. Dresser Manufacturing Division, Dresser Industries, Inc., Bradford, Pa.

Acetylene-air gas torch

A new pistol-shaped torch, with trigger lighting and shutoff, is recommended by the manufacturer for intermittent operations in

soldering work. It is also said to be effective for precision work. It is intended for one-hand operation, weighs 12 ounces and provides heat to 2,800°F. Combustion tubes are available in three sizes.

Torch-O-Matic. Velocity Power Tool Co., Pittsburgh 8.

A. O. Smith Moves in NE

Headquarters for A. O. Smith's New England sales operations were moved this month from Boston to Springfield, Mass. The new office, under the direction of W. T. Halket is located at 95 State Street, Springfield, Mass.

Shave those peaks! Reduce those high demand charges!

—and other increasing costs with a DRAKETOWN PROPANE PLANT. By operating a few days a week or a few weeks a year, it more than pays for itself. As a standby plant, it automatically goes into operation at the turn of a valve.

Whether for augmentation, peak shaving, standby, or 100% service, a DRAKETOWN PLANT, designed, engineered and built to meet your specific requirements is your answer.

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